

eat interest

for CONSTRUCTION

NEWS SUMMARY

GENERAL

BUSINESS

Experts probe Ekofisk blast

Two-figure inflation is still expected

Pasolini murder youth charged

Chrysler talks this week

Brighton Pavilion bomb attack

U.S. economy recovery will be damaged

Lost and found

Colonial defence

Nose tip clue

Briefly...

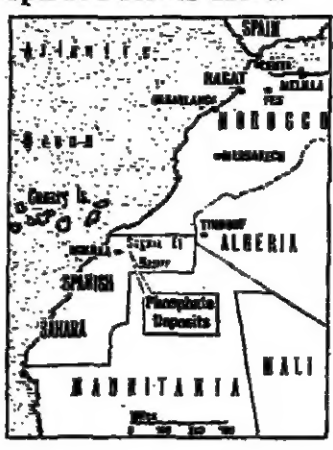
FEATURES

ON OTHER PAGES

Juan Carlos says Spain will repel Sahara invaders

BY JAMES BUXTON

The crisis over the Spanish Sahara worsened yesterday as Spain announced that it would repel a Moroccan invasion of the territory with force, if necessary. The Spanish acting head of State, Prince Juan Carlos, backed this apparent volte face with a flying visit to El Aaiun, the capital of the territory, to rally the Spanish forces there.



Court ruling

Petrol increase likely to be held at 3½p a gallon

BY RAY DAFTER

THE LATEST batch of price rise submissions being presented by major oil companies is even more heavily weighted in favour of the motorist than was recently anticipated.

DEPRESSED

Meeting soon

Junior doctors agree on ballot

BY CHRISTIAN TYLER, LABOUR STAFF

JUNIOR DOCTORS' representatives yesterday successfully ended a 20-hour struggle to find a form of words for a national ballot that they hope will appease the militants in the hospitals and allow their leaders to accept the Government's latest solution to the overtime pay dispute.

Amex gives tour price pledge

BY ARTHUR SANDLES

MIAMI BEACH, Nov. 2.


AMERICAN EXPRESS, the U.S. banking and travel giant, has joined in the "guarantee war" raging in the British package tour business. In a substantial expansion of its tour operating activities, the U.K. headed by Mr. Leonard Koven, former deputy head of Horizon Holidays, AMEX is pledging no currency surcharges on its tours for next year regardless of what happens to the pound.

Summons on MP threatens Labour majority

BY JOHN BOURNE, LOBBY EDITOR

THE SHADOW of the Government's next session looms as its automatic majority of one in the membership of Commons on legislative matters has been threatened by a summons on Mr. John Ryman, Labour MP for Walsall North, over alleged corrupt practice in the declaration of election expenses in the October 1974 General Election.

Your next step should be Sanwa.



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John Lewis ex-chief proposes abolition of equity capital

BY CHRISTIAN TYLER, LABOUR STAFF

ABOLITION of equity capital and transfer of company ownership to the workers was proposed by Sir Bernard Miller, former chairman of the John Lewis Partnership, at the week-end.

Describing equity shareholding as "outdated and divisive," Sir Bernard said that ownership and control of larger companies, say of over 100 employees, could be "vested in the whole workforce under trust arrangements that combine management, and managed in joint responsibility."

New law needed

Such a system, involving a new framework of company law, would involve the workers through the trade unions.

However, the unions would have to give up their traditional conflict with employers as they moved towards the plans for industrial democracy now emerging from the TUC.

The history of the nationalised industries showed that a different approach was needed. There were unions had made little progress in resolving employer-worker conflict.

Sir Bernard, who was giving

General purchasing power accounting rejected

BY MICHAEL LAFFERTY

THE DUTCH accountancy institute, NIVRA, has come down firmly against general purchasing power (g.p.p.) accounting in a written submission to the American Securities and Exchange Commission.

The SEC issued proposals in August that quoted companies should disclose replacement cost data in notes to their financial statements. This move was in direct conflict with the proposals of the Financial Accounting Standards Board, which favour general purchasing power accounting.

The U.K. accountancy bodies are expected to give their views on the Sandilands Report tomorrow. This report, which was published in September, recommends that U.K. companies should adopt current cost accounting, a system very similar to replacement cost accounting.

The SEC proposals are in line with an internationally developing trend. In addition to the U.K. and Holland, where replacement cost accounting has been a practice of long standing, a number of companies—this system of accounting has also been advocated or con-

sidered recently in Australia, Germany, and South Africa. Only the U.K. and U.S. accountancy bodies appear to support current purchasing power accounting, or general purchasing power accounting, which is very similar.

"The business community, because of its close and international relationships, would greatly benefit if there was general agreement between standard setting bodies on the accounting principles to be applied in times of changing prices," says the NIVRA report.

G.p.p. accounting cannot serve as a tool of management, if only because it cannot be integrated into the record-keeping system," states the submission.

NIVRA believes that the dangers of subjectivity in replacement cost accounting are often overstated "as much of the real problems in maintaining objectivity in historical cost accounting or in general purchasing power accounting are underrated." The report declares that estimates and subjective judgements are inevitable elements of any accounting system: in any case "replacement cost data are objectively verifiable to a substantial degree," it states.

The ponderable worth of tax avoidance plays

BY JUSTINIAN

FORTY YEARS AGO, the Duke of Westminster was a successful litigant against the Inland Revenue over a scheme to relieve him of heavy surtax liability. The same kind of legal advice, made available to the Duke, was used successfully twice (and at great expense recently) by highly paid actresses to avoid the burden of heavy taxation.

The device adopted by the Duke (unlike his emulators) was of devastating simplicity. He paid his employees by cheque by means of covenant provided that the payments were to be made without prejudice to any claim for remuneration to which the employees might be entitled. But it was understood by the employees that they were not expected to make any claim so long as the amount under the covenant and other payments they received equalled their current salary. Thus the Duke's wages bill was more than halved, the missing half being deductible payments under the Deeds of Covenant.

The importance of that case rests on the expression of principle that the courts were thereafter instructed to adopt in transactions designed to avoid tax. The Revenue contended that although the Duke's transaction was the form of a grant of an annuity or annual payment, in substance the transaction was an agreement by the employee to continue in the Duke's service at his normal salary. The House of Lords sided with the Duke. Lord Tomlin said: "It is said that in Revenue cases there is a doctrine that the court may ignore the legal position and regard what is called 'the substance of the matter'." The sooner this misunderstanding is dispelled, and the supposed doctrine is given its quietus, the better it will be for all concerned, for the doctrine seems to involve substituting the uncertain and evasive 'substance' for the 'golden and straight mete wand of the law'.

Another Law Lord, Lord Wright, put it more pitifully: "Once it is admitted that the deed is a genuine document, there is no room for the phrase 'in substance'." Or more correctly, the true nature of the legal obligation and nothing else is "the substance."

These ringing phrases did more than bring satisfaction to the Duke and his legal advisers. They have formed the backbone to many a counsel's opinion ever since, and have been applied in numerous later decisions of the courts in favour of a wide variety of tax-avoiding devices. The lordly words on their face actually encourage the ingenious draftsman to even more

prodigious efforts on behalf of a client. If only he can envisage an appropriate set of documents, each properly executed and stamped and brought into existence at the right time and giving rise to unmistakable legal rights, then there is no doubt as to what he is able to achieve, to what he may achieve, to the evident discomfort of the Board of Inland Revenue. All the draftsman has to be sure of is that he avoids the danger of any of his documents being caught by a chance which will happen in all the parties to the transaction have the common intention that they are not to create the legal rights and obligations they appear to create—and since statutory traps like section 460, Tax Act 1970 (formerly section 28, Finance Act 1960).

There are not unnaturally limits to what the draftsman can in fact achieve. And when he oversteps the mark the plight of the taxpayer can be severe. Not only must the tax that is payable be paid. The taxpayer must face fierce legal costs (most of these schemes go through the gamut of the courts). But into such schemes there is nearly always a hefty commission payable in any event to the advisers and financiers whom the taxpayer has chosen to conduct his tax-avoiding game. The more recent cases demonstrate the unhappy lot of the taxpayer who fails to emulate the Duke of Westminster, and has a huge bill to foot at the end of the day.

The first of the two cases concerned Miss Hayley Mills, the actress-daughter of a distinguished actor-father, who well-meaningly was anxious to make arrangements to secure that his daughter's earnings as a child actress would be "legally protected." With that in mind various experts were consulted. They produced a somewhat complicated scheme which was carried into effect. The scheme involved agents' commission of £1,000 per cent. (on the £1,000 services), directors' fees (£1,000 a year) and solicitors' and accountants' charges. As Lord Denning observed in the Court of Appeal, by the time all these legal fees had been paid, there will not be much left for Miss Mills. The scheme failed for a reason that is not germane to the present discussion. An even more complicated scheme was devised for Miss Julie Christie to enter into, which was carried by Mr. Justice Templeman earlier this year as a total failure. (The Court of Appeal and possibly the House of Lords have yet to pass judgment on the scheme.)

In essence the scheme involved three settlements, over a dozen agreements, and a team of 11 characters (excluding Miss Christie herself and the various genuine film companies whose urgent desire for her professional services made the scheme workable). One illustration of the network of agreements will suffice, mainly because it provides some instructive amusement.

There came a moment in the timing of the various steps in the scheme when a large capital payment had to be made, according to the legal document which had been carefully plotted. A co-operative banker was paid the trifling sum of a 1,000 guineas for attending the gathering of the clans with a draft for £475,000, which merrily circulated from hand to hand (strictly according to a sort of shooting script) before finally disappearing into the banker's pocket. Mr. Justice Templeman had this to say: "In effect £475,000 passed from the banker to Unilever to Cymbeline to Black Nominations to Swanlake to Wood so on down to Unilever and back to the banker, pursuant to documents which divided the profits from the Christie rights between the financiers and Black Nominations in the proportions of roughly 32 1/2 per cent. and 67 1/2 per cent."

The moral

To revert to the legal conundrum: for the taxpayer (nominally Black Nominations, in whose hands 67 1/2 per cent. of the proceeds of Miss Christie's very considerable remuneration landed), the Duke of Westminster's case was heavily relied on. All the documents were genuine. And the effect of the genuine purchases of this and that by the various parties who attended that bizarre meeting with the banker was that Miss Christie's income had become transmogrified into capital sums in the end. Why then did the scheme fail to achieve its tax-avoiding purpose?

The moral of this tale is that the Duke of Westminster's case did not so freely apply to day. Even if it were invoked, taxpayers, to whom an elaborate tax-avoiding scheme is offered for sale, would be well advised to assess not only its potential value as a tax-avoiding device but also its certain costliness in both ponderable terms like the "financiers' commission" and the imponderable ones of the cost of litigation against a not inexperienced opponent with the resources of the State behind him.

Duke of Westminster (1938) A.C. 1.
Affili v. I.R.C. (1975) A.C. 88.
and Black Nominations Ltd. v. I.R.C. (1975) Tax Leaflet No. 2558.

SOCCER

BY TREVOR BAILEY

Four good goals in this second division treat

YOU NEVER CAN TELL with football. The meeting between Chelsea and Plymouth Argyle at Stamford Bridge on Saturday, which brought a 2-2 draw, scarcely suggested a real treat. The home side, relegated last season and now in the wrong half of the Second Division, are unlikely to make that instant return optimistically predicted by their manager, while the visitors, who came up from the Third Division with an above average team, are struggling near the bottom.

These were not the ingredients for outstanding entertainment, and yet from the spectator's angle this was a far more enjoyable match than most First Division games I have seen this year. It contained four good goals, including one by Wilkins which is unlikely to be bettered, two brilliant, vintage Bonetti saves, plenty of action and, in attacking football, some delicious recovery from this setback: it was mainly from Plymouth, was Plymouth who provided the

and great enthusiasm throughout on a pitch made treacherous by rain.

However, it must be admitted that the main reason why it was so much fun, and why neither side is likely to win anything, was that both defences were not only tactically naive, but committed an astonishing number of mistakes. Plymouth had the excuse that their back four included two reserves, but the Chelsea rearguard really did crack. McAuley, a genuine left-winger, repeatedly turned Locke inside out. Harris and Droy found the opposition more often with their passes than their own colleagues, and two big men in the middle are not proof against a high cross, if they are not in the right position.

Chelsea began brightly when after only four minutes an awful defensive blunder allowed Britton to nip through and score, but once they had recovered from this setback, it was Plymouth who provided the

more consistent and cultured pressure. Once Bonetti did well to save from Randall, the most complete midfield player on view, and the visitors had every right to feel aggrieved at being a goal down at half-time.

After the interval they continued to threaten, but Chelsea went further ahead with a gem of a goal. Britton paved the way with a pass to Garner on the left wing and Wilkins, dashing up from nowhere, dived to head the cross past the keeper.

The attacks, which Plymouth had been mounting throughout at last paid off, when a clever diagonal pass found Mariner, an impressive striker, who stabbed it home. Shortly afterwards the same player, standing unattended beyond the far post, timed his header perfectly to level the score, following a fine left wing centre. In the closing stages Chelsea twice almost stormed through their opponents' in defence, but on balance the draw was the correct outcome.

RUGBY UNION

BY PETER ROBBINS

Cool Cardiff too clever for the Wallabies

AFTER THEIR sedate mid-week game against Oxford, the Australians came face to face with harsh reality on Saturday. A defeat by the limited Cardiff side beat them 14-9 thus maintaining the Welsh club's unbeaten record against Australia. The tourists could manage only three penalties by Maclean against Cardiff.

Cardiff deserved to win not only because they made more chances with their running (missing at least three tries by poorly-timed passes or knock-ons) but also they kept their cool much better than the visitors who failed to penetrate.

After summing in the first half, the match occasionally boiled over with Price going beyond the accepted limits of physical aggression. It may have been sheer frustration because Australia were so thoroughly beaten forward that their play behind the scrums became rather neurotic. It is still early days in the tour and Australia could well surprise some of the sides they face.

Portent

Cardiff's strength was initially the front row where Nelmes, Phillips and Knill dominated their opposite numbers. Early on, Cardiff lifted the Australia front row at a scrum which was a portent of the final result.

But it was at the line out that Australia were utterly annihilated. Not even the arrival of Billhouse in place of the injured Eisenbaur 12 minutes after the break changed matters. Australia's line out possession

was of little use to Hipwell. So, beaten significantly at the two set pieces, the tourists had to look for the vital loose ball in the middle. Neither side did anything to win the bare possession and Australia did not have that skill.

Penalty where they had either a first wave of five forwards advancing as a shield or later two rows to mask the ball in either case did anything come of it. It takes a skilful side to win the bare possession and Australia did not have that skill.

Maclean kicked two penalties but just on half time Williams broke from a maul on the Australian 10-yard line passing quickly to Jones. Cardiff's left wing is surely not the quickest runner but surely the most astute minded, and he creased for the line like some driverless bulldozer to score in the corner.

The visitors' tenuous lead was quickly obliterated as their centres were caught offside and Gareth Davies kicked a penalty. Maclean missed another penalty and only a knock on by Philipson prevented another Cardiff score.

When Price punched Worgan in the open, Davies made it 10-6 to Cardiff when Dudley Jones came on for Stuart Lane. Davies missed a penalty when Price viciously tackled John Davies but Cardiff's half made full amends with the try of the match. From a ruck excellently set up by Phillips he dummied with his two centres passing direct to Jones who juggled with but held the ball. Davis with typical Welsh cleverness ran on the whole issue: Welsh inventiveness versus Australian rugby by the numbers.

Australia introduced a note of originality in their short statistics.

RACING

BY DARE WIGAN

A chance for recompense

BOOKMAKERS in the Winchester area would have taken a canning had *Liberty Lawyer* won the Scobie Brosley Stakes for the winner, Kiyowasance. *Liberty Lawyer*, who reserves his best form for the autumn, seeks recompense this afternoon in the Lingfield Handicap (2.45) at Lingfield.

It is unlikely to pose a problem. In fact, I anticipate his winning. The supporters of *Agroza* are hoping that the Billy will notch his thirteenth success of the season in the Plaistow Plate (4.15), and judged on form there is no reason why she should not. Truly brave ought not to be unduly pressed to get the better of moderate opponents in the Chaldon Stakes (2.15). *Leading Apprentices* Handicap (4.00).

her with *Steel Power*, an attractive colt by Vaguely Noble, whom Scobie Brosley trains for the winner, Kiyowasance. *Liberty Lawyer*, who reserves his best form for the autumn, seeks recompense this afternoon in the Lingfield Handicap (2.45) at Lingfield.

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Liberty Lawyer, who is bred to stay any distance within reason, may not have to improve on her third to Regent's Garden and Melody Bay at Newbury on the other day to land the Biggin Hill Handicap (2.15).

At Leicester the best bet on the programme ought to be *Mordred Hills* in the Pakeny Maiden Plate (2.55). For the American-bred filly, after finishing a creditable third to Duke Ellington and Kellystown at Sandown at the end of August, may have been a trifle unfortunate when narrowly defeated by Aquilegia at Windsor in September. She is reported to have been working well at Newmarket. Other suggestions for Leicester are *Windmill Boy* who is likely to have to make restoration for *Blessed Boy* in the Wyalid Maiden Claiming Plate (1.30); *Petwood*, who just went under to Majesty at the recent Doncaster meeting; and *White Wonder*, who was well ridden by A. Cressy in the November Apprentices Handicap (4.00).

SHOW JUMPING

Broome sweeps German aside

AMSTERDAM, Nov. 2. DAVID BROOME of Britain riding Sportsman won the Netherlands Grand Prix jumping event at the Horse Show here today beating European champion Alwin Schockemuehle of West Germany on Santa Monica to second place.

Former world champion Broome covered the 555 metre course with 25 obstacles in brilliant style clocking 56.6 seconds against Schockemuehle's 55.9 seconds. Ireland's Eddie Macken riding Boy was third in 57.3 seconds.

TENNIS

Okker's title

PARIS, Nov. 2. TOM OKKER (Holland) won the French indoor lawn tennis championship by defeating Arthur Ashe (U.S.) 6-3, 2-6, 6-3, 3-6, 6-4 in the final here today.

GOLF

Nicklaus wins Australian Open

JACK NICKLAUS won his fourth Australian Open golf yesterday at Sydney.

Nicklaus, who began the final round sharing the lead at nine under par with Billy Dunk, finished three strokes ahead of fellow American Bill Brask with Dunk, an aggregate 279 and 72 for the Stanley and Gary Player from final round.

Star Offshore buys diving group

BY JAMES McDONALD

STAR OFFSHORE Services has bought all the share capital of North Sea Diving Services of Great Yarmouth and its subsidiary and associated companies. The purchase price is £137,500 in cash, £120,000 in SOS shares issued on October 30 and £33,000 in SOS shares to be issued on December 31, 1976.

This last share issue is subject to variation up or down, dependent on NSDS profits for 1975 and 1976. The total profit of the group for 1974 was £25,139.

About six months ago, SOS took over Northern Divers Ltd., of Hull, and this latest acquisition

tion now makes it the largest British-owned diving group. Mr. Ian Fraser will remain managing director of NSDS and will be joined on the Board by Brigadier Parker as chairman, Mr. A. J. Beveridge, Mr. P. J. Hedger, Mr. G. H. Searge, Mr. A. Sparrows and Mr. A. Jerny.

PAULS & SANDARS CLOSES MALTINGS

Lack of orders from distillers forced Pauls and Sandars to close their malting factory at Wellingborough, Northants, yesterday.

Radio

† Indicates programmes in black and white

BBC 1

8.25 a.m. For Schools, Colleges, 10.15 You and Me, 11.00 For Schools, 12.25 p.m. North Sea, 1.30 For Schools, 2.00 For Schools, 2.30 The Queen inaugurates the first coast-to-coast relay of British North Sea, 3.00 News, 3.15 For Schools, 3.30 For Schools, 3.45 For Schools, 4.00 For Schools, 4.15 For Schools, 4.30 For Schools, 4.45 For Schools, 5.00 For Schools, 5.15 For Schools, 5.30 For Schools, 5.45 For Schools, 6.00 For Schools, 6.15 For Schools, 6.30 For Schools, 6.45 For Schools, 7.00 For Schools, 7.15 For Schools, 7.30 For Schools, 7.45 For Schools, 8.00 For Schools, 8.15 For Schools, 8.30 For Schools, 8.45 For Schools, 9.00 For Schools, 9.15 For Schools, 9.30 For Schools, 9.45 For Schools, 10.00 For Schools, 10.15 For Schools, 10.30 For Schools, 10.45 For Schools, 11.00 For Schools, 11.15 For Schools, 11.30 For Schools, 11.45 For Schools, 12.00 For Schools, 12.15 For Schools, 12.30 For Schools, 12.45 For Schools, 1.00 For Schools, 1.15 For Schools, 1.30 For Schools, 1.45 For 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HOME NEWS

Whips fear back benchers revolt over devolution

BY JOHN BOURNE, LOBBY EDITOR

GOVERNMENT Whips are alarmed at real trouble in the Commons next year over the Cabinet's coming White Paper on devolution and the Devolution Bill when they are published.

In spite of the reassuring words of Mr. Edward Short, Leader of the Commons and Minister responsible for Devolution, in a number of Press and radio interviews in the last few days, resistance to the idea of devolving substantial legislative powers to a Scottish Assembly is growing day by day in the two major parties.

Indeed, some Whips now believe that, depending on the precise contents of the White Paper, there could well be a repetition of the "unholy alliance" of backbench Tory and Labour MPs which effectively blocked the Labour Government's proposals for reform of the House of Lords in the late 1960s.

Were this to happen, it would certainly get the Conservative front bench off its present hook, which is that, like Labour, the

Conservative Party officially promised a Scottish Assembly in its last election manifesto. The fear of back benchers is that the Government's proposals, far from stopping the Scottish Nationalist Party's pressure for complete separation for Scotland, will only open the floodgates.

On the Labour side, there is also concern that if there are to be Scottish and Welsh Assemblies there should be similar bodies for the major English regions.

Meanwhile, Mr. Edward du Cann, chairman of the 1922 Committee, intends to meet Mrs. Margaret Thatcher shortly with members of his executive to discuss devolution, and in part-

icular to ask her to establish a permanent Constitution Committee of back benchers to study the subject under the chairmanship of her front bench spokesman, Mr. William Whitelaw.

The Liberals, who favour proportional representation, will undoubtedly fight that section of the White Paper which proposes election of the Assemblies by the traditional method of a simple majority.

Yesterday, a leading Scottish devolutionist Mr. Jim Sillars (Lab., South Ayrshire) dismissed the suggestion by Mr. Norman Buchanan (Lab., West Renfrew) that a referendum should be held on the question of a Scottish Assembly.

Mr. Sillars said he had no doubt a referendum would endorse the creation of a Scottish Parliament with considerable powers and would reject the SNP's position of separation from the U.K.

Jetsave and TWA in U.S. travel deal

BY JAMES McDONALD

JETSAVE, one of Britain's leading low-cost air travel operators, and Trans World Airlines have negotiated a \$20m. two-year agreement for the joint development of low-cost travel and holidays between the U.S. and Britain.

The agreement, reached yesterday in Miami Beach, Florida, at the convention of the Association of British Travel Agents (ABTA), is claimed to be the largest and most comprehensive air charter arrangement ever signed. It carries on the three-year-old association between Jetsave and TWA.

The deal covers the operation of advance booking charter services by Boeing 747 jumbo and Boeing 707 aircraft from London, Manchester and Prestwick to points throughout the U.S., together with the development of inclusive holidays to the U.S. under the selling name, "Jetsave Vacations."

Within the new agreement will be joint development of tours for Americans from the U.S. to Britain under the recently liberalised U.S. Government travel rules. "We are delighted to renew our successful partnership with TWA and to be able to add the Boeing 747 jumbo to our programme," said Mr. Reg Fyfe, managing director of Jetsave, ABC seats at fares from £99 expanding U.K.-U.S. package

Canadian route

Jetsave Vacations recently announced a programme of inclusive holiday arrangements offering scheduled service and charter flights at fares ranging from £145 return for 14 days in New York. An expanded programme of facilities throughout the U.S. will be announced soon.

Under the new contract, too, there will be advance booking charters by 747s and 707s from London, Manchester and Prestwick to Los Angeles, New York, San Francisco, Chicago, Miami, Boston and Washington. Passengers will have the full benefits of connections throughout the U.S. on TWA's domestic network.

Next year also, Jetsave services to Canada will be operated by CP Air and Canadian Pacific under a recent \$6m. agreement covering flights from London, Manchester and Prestwick to Toronto, Vancouver, Calgary, Montreal and Halifax. In all, Jetsave next year will serve 16 destinations in the U.S., Canada, the Caribbean and Africa, offering over 100,000 ABC seats at fares from £99 return.

Stainless steel orders improve

ORDERS FOR stainless steel sheet for the British Steel Corporation in Sheffield is continuing to improve, but this is not being regarded as any indication of an end to the steel slump.

In other areas, particularly in carbon steel, and castings, enquiries, orders are still declining.

On the slight improvement in stainless steel sheet orders, the BSC said: "This has lifted demand just off the bottom, but trade continues at a very low ebb." The most noticeable factor in the increased order pattern is that there appeared to be more demand from stainless steel sink manufacturers.

The sheet market was the first South Yorkshire BSC unit to feel the depression and production dropped to about 50 per cent of normal more than a year ago.

There are no indications yet, of any significant upturn in other stainless or alloy steel orders and officials expect a depression in forgings and castings in the next few months, prior to any business pick-up.

SDN seeks six-months reprieve

THE CHAIRMAN of the Scottish Daily News workers co-operative has appealed to the Government to give his ailing newspaper another six months to prove that it can stand on its own feet.

The paper is in the hands of a provisional liquidator and faces closure at the end of next week unless a buyer or more capital is found.

At a rally in Glasgow, attended mainly by the 500-strong workforce and their families, Mr. Alister Blyth launched a final campaign to get the Government to keep the paper going.

"One of the main reasons why we have arrived at this very critical stage in our short life is that, as anyone in the newspaper industry will tell you, it takes at least a year for a newspaper to become established. "We need a year. We are only half-way there—unfortunately, it has become quite clear now we are under-financed from the start."

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Shipping tonnage up 10% in past year

BY JAMES McDONALD, SHIPPING CORRESPONDENT

WITH THE world shipping industry in a state of acute depression, the prospect for early recovery is not encouraged by the fact that the world's merchant fleet has expanded by nearly 10 per cent over the past year and is now double the size in terms of tonnage, of nine years ago.

Lloyd's Register of Shipping statistics published to-day, shows that the world total grew over 12 months to mid-1975 by 30.8m. gross tons to 342.2m. tons.

These figures, of course, do not reveal the volume of tonnage laid-up because of the depression, including a number of ships—particularly supertankers, which country have gone into lay-up immediately after delivery from the shipyards.

The tax-free flag of convenience country, Liberia, has consolidated and strengthened its leadership in the world shipping "league" table with a growth in its fleet last year of a massive 10.5m. tons to 65.8m. tons. Japan ranks second with a comparatively minor expansion of 1m. tons to 39.7m. tons, followed by the U.K. with a growth of 1.6m. tons in its flag-fleet to 33.2m. tons.

Norway, also facing problems with its tanker fleet employment prospects, ranked fourth with an

expansion of 1.3m. tons to 28.2m. tons, while Panama—another flag of convenience nation—registered a growth of 2.7m. tons to 13.7m. tons. It is interesting to note that the Singapore flag fleet grew over the year by over 1m. tons to 3.9m. tons and now ranks 16th in the world in size.

Oil tankers account for 150m. tons of the 342m. tons world merchant fleet, recording an increase of 2.7m. tons over the year in today's depressed conditions of 20.6m. tons.

Bulk-carriers expanded by 1.7m. tons to 23.7m. tons and ore and bulk carriers grew by 4.4m. tons to 61.5m. tons. General cargo shipping—less affected than other classes by the depression—expanded in size by only 1.7m. tons to 70.4m. tons while the container ship fleet actually showed a slight decline to 8.2m. tons.

In the general cargo ship sector Russia leads with a fleet of 7.3m. tons and represents a menace to some shipping conferences, followed by Greece with 6.3m. tons, Japan with 4.8m. tons and the U.K. also with 4.3m. tons.

Lloyd's Register's statistics also disclose that Russia now has more than twice as many modern, sophisticated large tankers as the rest of the world put together.

ICI drug breakthrough in planned cattle breeding

BY RICHARD MOONEY

A BREAKTHROUGH in planned cattle breeding is claimed to-day by ICI. A new drug, Estramate, which it will begin marketing in the U.K. shortly, will "take a lot of the guesswork out of artificial insemination (AI)," it claims.

The company says two injections of Estramate, an analogue for a naturally occurring substance crucial to the breeding cycle, can be guaranteed to bring a cow into heat within 72 hours—thus eliminating the need for heat detection in AI planning.

The main advantage of this will be for beefers and beef suckler cows which do not pass through the milking parlours and thus difficult to monitor. It could also help farmers to avoid cullings at inconvenient times such as weekends.

ICI estimates a package deal including two Estramate injections (administered by a vet) and two professional inseminations will cost £27.50 per cow. Against this must be set the cost in lost production of missing a heat, which could be around £20.

Estramate, which ICI stresses, is not a fertility drug, is the result of eight years of research including two years of trials involving some 20,000 cows. It will be the first drug preparation to become commercially available and as such has been instrumental in the Milk Marketing Board's recent decision to quote AI charges on a sliding scale for insemination seasons involving 10 or more cows.

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Inflation may cost process industry £1bn. orders

BY RAY DAFTER

THE U.K. process plant industry looks like losing up to £1bn. worth of export business this year because it has been unable to control the effects of inflation on contract prices.

The figure has been produced by engineering contractors and manufacturers of process equipment to support their claim for a more effective cost escalation insurance scheme from Government.

The industry, through the CBI, NEDO and trade unions, is making a renewed effort to have the existing insurance scheme, amended. It is claimed that the scheme, operated through the Export Credit Guarantee Department, does not allow industry to compete for the fixed price contracts being offered in the Middle East, Eastern Europe and South America.

At the same time, it is claimed, the U.K. contracting industry is losing out to countries like West Germany which have lower rates of inflation or others like France or Spain which have more effective inflation insurance cover.

In normal times, if a U.K. contractor won a big overseas contract, much of the manufacturing work would be awarded to British companies. However, where contractors feel able to take on major overseas contracts they are placing a far greater proportion of the physical manufacturing work in countries like France and Germany.

Commander John Hamer, director of the Process Plant Association, said yesterday that it has been estimated that £1bn. worth of orders which might have come to Britain this year had been lost to overseas competitors. While there was no guarantee that U.K. contractors and manufacturers would have been awarded this work if greater inflation insurance cover had been available, their chance would have been very much better.

To a large extent, the process plant sector is still busy, living off the fat of past orders. However, there is a fear that companies could be heading for a serious recession of business in the next year. "We see 1976 as being one of the nastiest years up."

Speaking on a BBC radio programme, he added: "You cannot hold me or any of my firm."

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Laker claims 'massive support' for Skytrain

BY MICHAEL DONNE, AEROSPACE CORRESPONDENT

LAKER AIRWAYS, after conducting a public opinion poll on the proposed low-cost reservation Skytrain service between Stansted and New York, claims to-day that there is "massive support" for the venture.

The poll, completed on October 22, shows that 88 per cent of the people asked thought that Skytrain was a good idea and that the Government should allow it to operate.

Although the plan was originally given a licence by the Civil Aviation Authority some time ago, Mr. Peter Shore, Secretary for Trade, said in the Commons recently when announcing the results of his civil aviation policy review, that he did not think Skytrain would be viable under present market conditions, and that he was therefore not proposing to allow it to start.

Since then Mr. Laker has been campaigning vigorously to make Mr. Shore change his mind, and his opinion poll is the latest step.

Market and Opinion Research International took a sample covering 1,019 adults living in the Greater London area, and "The findings from this survey have reinforced the results of previous studies, which suggested that not only is there an enormous potential market for a Skytrain-type of service, but that a large part of that market does not constitute a barrier for the existing scheduled services between London and New York," says the survey.

The official figures for the reserve position of the banks, which has been getting steadily easier, will also appear, and a further rise in reserve ratios is generally expected. "This will reinforce the market's expectation of an early call for special deposits, to keep some check on the growth of the liquidity of the banking system—and also, perhaps, to reduce the necessity to issue still more Treasury bills."

The authorities appear resigned to an unusually fast rise in the monetary aggregates in the immediate future, but are under increasing pressure to mop up some of the excess liquidity in the system in spite of the absence of any private demand for credit.

The main reason for this is the rapid improvement in industry's liquid position, which has been marked in the official figures for some months—at present industry is almost certainly in modest financial surplus, after the huge deficits of recent years.

This financial improvement is the result of destocking and tax concessions. Profits, however, remain a subject of acute concern.

The relief from financial strain is likely to be reflected in the tone of the CBI quarterly survey of industrial trends, whose results are to be published on Thursday.

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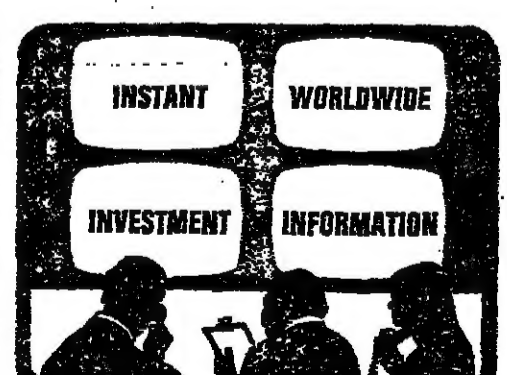
Let Merrill Lynch suggest 7 ways you may beat inflation

Merrill Lynch has seven suggestions for investors seeking a hedge against inflation or ways to increase returns on U.S. investments.

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HOME NEWS

PM calls for co-operation in battle against inflation

BY OUR INDUSTRIAL STAFF

THE PRIME MINISTER appeals through competing in world markets with all-comers, than by work with the Government to shrink into a siege economy."

A special issue of the CBI quarterly review concentrates on the problem of what lies ahead for Britain in the next 12 months. In addition to the viewpoint put forward by Mr. Harold Wilson, the leaders of the other two principal political parties, and the director general of the CBI, add their contributions.

The Prime Minister emphasises the need to take measures to tackle inflation upon consent. All of us—Government, industry and the trade unions—must now combine to maintain the momentum of discussion and planning if the effort to solve our national economic problems is to be sustained.

Mrs. Margaret Thatcher, the leader of the Opposition, argues for a greater understanding of the role of profits in business and urges increased profitability as the way to boost investment. She says "British business is more likely to be efficient while he welcomed the

measures taken by Denis Healey, Chancellor of the Exchequer, and Eric Varley, Industry Secretary, in September. "We pointed out that a broader programme of expansion was still needed."

Mr. Murray, reinforcing his earlier calls for import controls, says: "Perhaps the single most acute anxiety at present is the growth of imports in particular sectors, and the implications of this not only for jobs in the short term but also for the existence of major sectors of British industry."

"That is why the TUC has been urging the need for selective import controls."

The need for the nation to welcome and encourage change is the theme of the article by Mr. Campbell Adamson, of the CBI, who says: "The first priority is a change in the whole attitude towards growth and industrial profitability as the vital trigger for growth."

Mr. Murray calls in the review leader of the Opposition, argues for a greater understanding of the role of profits in business and urges increased profitability as the way to boost investment. She says "British business is more likely to be efficient while he welcomed the

Company profits fall continues

By Ron Putland

PRE-TAX profits of companies reporting last month continued to decline, although at a more modest rate than in recent months.

The 89 companies that published their full accounts in October produced pre-tax profits of £150.1m., compared with £155.2m. a year earlier, a fall of 2.9 per cent. This is a better performance than in September, when there was an 8.4 per cent. shortfall, and in August, when profits were down by 11.3 per cent.

Only one leading company (Great Universal Stores) reported last month. Dividends payable to shareholders last month amounted to £24.9m., down 2.8 per cent. on October, 1974.

Import controls would lead the Government to expand the economy without waiting for a recovery of world trade, the Labour Research Department suggests. It argues that curbs on foreign goods would not lead to retaliation because other countries have more to lose.

100% PRE-TAX PROFITS

50% DIVIDENDS

1973 1974 1975

Plastics processors seek 'little Neddy'

BY RAY DAFTER

THE plastics processing industry is seeking its own "little Neddy" within the National Economic Development Office to emphasise its importance in the U.K. economy.

The sector steering committee has applied to be taken out of the chemicals "little Neddy" and to be given greater status of its own. Mr. Ron Lewis, chairman of the committee and president of the British Plastics Federation, said such a move would give "fresh impetus to a much neglected industry."

The move by the processing sector underlines the difference of interests in the overall plastics industry. On many occasions it has been difficult to reconcile the aims of material manufacturers—companies like ICI, BP,

Shell and Esso—with their customers which process the plastics into consumer and engineering products.

It is estimated that there are some 2,800 processing companies in the U.K. Last year they converted between £630m. and £680m. worth of materials into products with a sales value of around £1.5bn.

According to the Plastics Federation, which is itself driving for a higher membership among processors, the sector has a capital base of around £740m. and some 158,000 employees.

Processing companies are having a lean time because of the general economic recession. As a result material suppliers are now operating plants at 50 to 60 per cent. of capacity.

Brokers forecast rise in demand in mid-1976

BY ANTHONY HARRIS

A "SIGNIFICANT RECOVERY" in demand, led by exports and stockbuilding, is forecast from mid-1976 by stockbrokers Phillips and Drew, whose monthly economic forecast, published to-day, provides its first estimate to mid-1977.

Real growth of 4½ per cent. in the year to July 1977 is forecast, even in the absence of any Government action to stimulate the economy. This is thought unlikely because of difficulties in obtaining the Government's inflation objectives, and in securing a satisfactory second-phase agreement on wage restraint.

The forecast points out that the Government will face a number of painful dilemmas in the next few months, before recovery begins. The brokers expect that the

Government will announce further cuts in public spending of £1.5bn., on top of the £1bn. already announced, but say that this will not be enough to prevent an accelerating growth in the money supply; this would require a cut of nearly £30n.

A compromise solution is also forecast on import controls where the Government is expected to yield to demands for temporary and selective restrictions where dumping by importers can plausibly be argued, but will refrain from wide-ranging restrictions for fear of retaliation.

Inflation is forecast to average 13½ per cent. from now to the end of 1976, while the negotiations over future wage policy "are likely to take place when inflation is still running at 16-17 per cent."

£10 dine-dance ferries for Belgium

BY JAMES McDONALD, SHIPPING CORRESPONDENT

TOWNSEND THORESEN Car Ferries is offering a round trip in its newest ship, Viking Valiant, on the Felixstowe-Zeebrugge route for £10, which includes a three-course dinner, discotheque dancing, cabin accommodation and continental breakfast.

Dine-Dance sailings leave Felixstowe at 4 p.m. on Fridays and Saturdays. On arrival in Belgium there is a two-hour

shop-ovr and passengers may go ashore although the dining and dancing continues. The ship arrives back at Felixstowe at breakfast time the following morning.

These special no-passport trips are aimed particularly at parties of friends or groups organising club or company outings. Arrangements for coach travel can be made for groups of 30 or more.

Housing finance reform plan

BY MICHAEL CASSELL

A 10-YEAR plan for the reform of housing finance has been put forward by the Housing Centre Trust.

The Centre has submitted evidence to the Government's present review of housing finance and says that its proposals should be broadly acceptable to all the various interest groups as well as being fair in its effect on individuals.

The main recommendation is a series of financial measures calculated to give the necessary confidence to central and local Government, building societies and builders for a house building and improvement programme.

The measures are designed to share Exchequer housing aid

funds fairly between owner-occupiers and tenants in subsidised property, to allow for maximum freedom of housing choice and to ensure efficient use of money, manpower and materials.

In the private sector, the centre suggests that help should be confined to those people most in need. Tax relief would only be given on new mortgages at the standard rate and a "one-man-one-mortgage" principle established which would provide less favourable terms than at present for the owner who could afford to exchange his property for one costing more.

In the public rented sector, a

national housing account is proposed in which the pooled loan charges of all authorities are divided by the pooled values of all houses in council ownership. A formula would allocate an annual target contribution to the account by each local authority leaving it free to fix individual rents. A system of surpluses and deficits would help to even out pressures due to changes of history or location.

The centre also suggests a common rate of tax relief subsidy to be applied to both mortgage interest and local authority charges. It should start initially at 11 per cent. and be gradually reduced over the 10-year period.

Fewer cases for Public Trustees

ATTRACTING new business to the Public Trustee's office has no quick or easy solution, says Mr. H. H. W. Duff, the Public Trustee, in his 1974-75 report to the Lord High Chancellor.

"Although there are signs of increases in the number of acceptances, there is no immediate prospect of reversing the decline in the number of cases under administration," he adds. The number of cases accepted in the year to March 31 rose slightly from 126 to 146 but their value fell by over £1m., while completed administrations (735) remained at about the same level.

Previous experience suggests that occasional advertising in the national Press produced insufficient new business to justify renewing that campaign but consideration is being given to selective advertising in local Press and house journals.

The year ended with a provisional deficit of £413,908, compared with the previous year's adjusted deficit of £26,896. Sixty-seventh Annual Report of the Public Trustee, 1974-75, 50: 20p.

Fewer renovation grants approved

THE NUMBER of home improvement grants approved is falling, being the fall was almost 80 per cent. below the peak levels of 1973, according to the National Home Improvement Council.

In a letter to Mr. Reg Freeman, Minister for Housing and Construction, the council expresses concern at the "appalling slump" in activity in house

because the 1974 performance was significantly down on the preceding year. The council says that between January, an 85 per cent. total grants approved, were just over 48 per cent. down on the same period of 1974, and over 68 per cent. below the equivalent nine months, of 1973.

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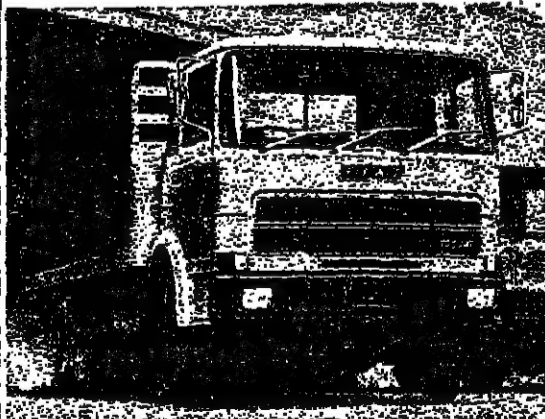
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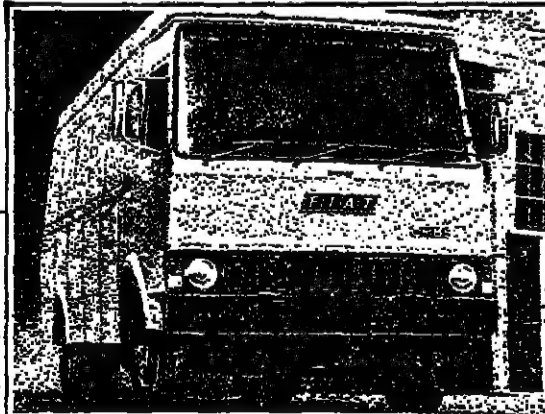
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road users, and for people in general, by getting on with their work quickly, quietly and cleanly.

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OVERSEAS NEWS

Leftists may be gaining ground in Beirut

BY IHSAN HIJAZI

BEIRUT, Nov. 2

SECURITY committees representing the rival factions to-day began the process of applying new measures aimed at enforcing yet another cease-fire—the 12th in the past six weeks.

The committees were formed after a meeting held by the Prime Minister, Mr. Rashid Karami, which went on for most of the night and into the early hours of the morning.

Afterwards the Prime Minister said that if the new measures were carried out, life in the country would begin to go back to normal; the Lebanese, who would have been virtual prisoners in their houses, could venture out to the beaches to-day.

But only a few fishermen were seen along the coast. In fact a part of the seafloor remains one of the hottest confrontation areas here.

Militiamen of the Rightist Phalangist Party are holding on to their positions in the main international hotels along the front while Leftist armed men have been intensifying the pressure to oust them.

Sporadic shooting and explosions continued to be heard throughout the day despite the new truce.

It is thought that at least 30 people died in Beirut and in the Bekaa Valley in eastern Lebanon to-day.

The combatants are no longer satisfied with shooting it out from fixed positions but have been trying to gain territory.

They have made claims and counter-claims as to who is winning on the ground. The daily newspaper Al Moharrer, which reflects the views of the combined Leftist forces, said in its main story that the military position of the Phalangist Party had collapsed, that Phalangist militiamen were running out of ammunition and that the Phalangists hoped to receive emergency supplies by air to-day.

Phalangist sources, on the other hand, said that they had pushed back the Leftists in several districts and put them on the defensive. The sources also charged that the Palestinian Commando Movement had been fighting in full strength on the

side of the Leftists.

Independent observers, including Western sources, believe the Rightists have been losing ground, are running short on ammunition and are cornered in several parts of the country. They noted that the Leftists have had easier access to ammunition by routes to neighbouring Syria.

A statement on Friday by the Socialist leader Mr. Kamal Jumblat reflected the confidence of the Leftists are showing. Confronted on the possibility of expanding the present six-man Cabinet, Mr. Karami, he said, "Half the seats in the new Cabinet should go to the Leftists."

Israel plans to send more cargoes through Suez

BY L. DANIEL

TEL AVIV, Nov. 2

WITH the first Israel bound cargo—8,500 tonnes of cement from Constanza which is being carried by the Greek vessel "Olympus"—to the Israeli Red Sea port of Eilat—now passing through the Suez Canal, plans are already afoot for the further despatch of cargoes through the canal.

This is in view of the last minute difficulties which were encountered by the Greek skipper of the vessel in getting

hold of the passage dues which had been sent to a Cairo bank. It is not clear as of now whether the hold up was one of red tape and inefficiency was caused as a deterrent.

Smooth passage for future cargoes is a sine qua non for a reduction of the insurance premium by Lloyd's. Australian exporters to Israel are following developments closely in connection with their shipments of wool and meat to Israel.

Illegal Spanish parties unite in freedom call

BY ROGER MATTHEWS

MADRID, Nov. 2

IN A RARE display of unity all Spain's illegal opposition parties last night issued a joint statement declaring that they were going to step up their fight for democracy, based on the popular will of the people.

The parties, which range from the extreme Left through the Communists, Socialists, Christian Democrats, and regional parties to the Social Democrats, said they rejected the laws of succession dictated by General Franco and demanded a referendum to decide the constitutional future of the nation.

Among their specific demands were the release of all political prisoners and the return of exiles, the introduction of full human rights as recognised by international agreements, free trade unions, the rights of all political parties to organise freely, and universal suffrage to decide via a constituent assembly on the most favoured form of government for Spain.

These aims would be pursued, according to the communiqué, by the mobilisation of the people through a series of peaceful actions. At a Press conference last week the Communists, who are the leading faction in one of the country's two main alliances, the Democratic Junta, said they were planning to stage a massive general strike when conditions were ripe.

The Junta added that talks were being held with the Democratic Platform, the other main opposition alliance, the fruits of which were seen last night in the joint communiqué. A planned Press conference had to be

abandoned because of police action.

Meanwhile Prince Juan Carlos has been continuing his extensive talks with a range of Centrist and Right-wing politicians. In order not to upset the extreme right too rapidly he has seen Senator Jose Antonio Giron, a former Franco Minister, and has been getting another view on the regime of the past 36 years from ex-Foreign Minister Senor Ramon Serrano Suner.

The latest bulletin on General Franco said that he was still gravely ill but had taken Communion this morning in the presence of his family. His temperature had tended to fluctuate during the day although the internal bleeding had almost stopped. In a newspaper interview his sister said that the family was praying for a miracle.

U.S. TECHNICIANS ARRIVE

By Our Own Correspondent

TEL AVIV, Nov. 2

THE first group of American technicians which is to be posted at the forward electronic listening posts on both the Egyptian and Israeli sides of the strategic Sinai passes has arrived in the Middle East, some of them in Israel. The men, all volunteers, have signed for periods of up to three years. A few of them are Vietnam veterans. They are likely to tour the area in which they are to be stationed within the next few days.

'New York default would threaten U.S. recovery'

BY GUY DE JONQUIERES

NEW YORK, Nov. 2

IF NEW YORK City is allowed to default the impact will damage the U.S. economic recovery and increase the number of unemployed across the country, according to a new report published by the joint Economic Committee of Congress this week-end.

The report said that a default would push up interest rates and make banks more cautious in their lending policies. Higher borrowing costs will force state and local governments—which account for about 15 per cent of gross national product—to cut back their expenditures.

As a result, the report forecasts, the rate of real economic growth in the U.S. will be reduced by a full percentage point between the final quarter of this year and the last quarter of 1976, and the number of unemployed will rise by 300,000.

The committee, which is chaired by Senator Hubert Humphrey of Minnesota, sharply disputes President Ford's claims that a default by New York would have only insignificant repercussions on the rest of the country and says that the ultimate cost of denying Federal aid will be much higher than that resulting from temporary Federal guarantees of the City's borrowings.

Without Federal assistance, the committee says, the City will have to cut its budget for basic services by half in the first three months of next year. This would

have such a devastating effect on basic city services that it cannot be considered a viable option.

Despite Mr. Ford's threat to veto any Federal aid legislation that it was conveyed to last week, both the House and Senate banking committees have now approved broadly similar proposals to guarantee the City's borrowings before or after a default.

But the outlook for the City on the floor of both Houses remains extremely uncertain. Meanwhile, New York City authorities have turned down a mysterious offer of a loan of several billion dollars, supposedly from Arab sources it was disclosed this week-end.

A spokesman for Mayor Abraham Beame said that the rejection had nothing to do with the fact that New York has a large Jewish population. The reason was that the offer was hedged about with too many unacceptable conditions.

The loan offer was first reported by Jack Anderson, the syndicated columnist, who said

Portugal faces week of tension over Angola

BY JANE BERGEROL

LISBON, Nov. 2

A TENSE week lies ahead for Portugal in the build-up to the November 11 referendum on the country's independence. There are risks of more extremist violence as a right tries to force the sixth Government's attitude on Angola towards neutrality and the left tries to steer it towards outright recognition of the socialist Popular Movement for the Liberation of Angola as the sole representative of the Angolan people.

Showing further determination to crack down on leftist armed militias, Portugal's Revolutionary Council has decreed that armed brigades in possession of military weapons will be tried before military and not ordinary civilian courts. In a series of tough measures published over the week-end the council also set up special military courts for trying the former FIDAE-Caetano's political police—and for trying the involved in the failed March 11 coup and fled to Spain with Spinoza, have now been brought to Lisbon's Caxias jail for interrogation. The circumstances of their arrest link Spinoza's clandestine Democratic Movement for the Liberation of Portugal (MDLP) both with the Catholic Church and with Angolan refugees in Portugal.

Braga townspeople alerted the local police and military after a number of "well-dressed" people entered a local church and an unusually timed mass was held. The church doors later clanged shut and the "congregation" apparently adjourned for a secret meeting in the adjoining seminary, being used as a refugee centre. Police found the two officers hiding under Angolan refugees' beds in the seminary. More searches are under way in the north to check on reports of other Spinozists' illegal entry into the country.

The Angolan refugees who have flooded into Portugal prior to independence on November 11 have now organised themselves into a number of associations and are putting out a weekly newspaper. There is some fear they will clash tomorrow in Lisbon with a major demonstration organised by the left in support of the socialist Popular Movement for the Liberation of Angola (MPLA), as many of the refugees are said to support the two other liberation movements and are bitterly opposed to what they see as the risk of Portuguese Government recognition of the MPLA as the sole representative of Angola.

Reater reports from Luanda: The three warring liberation movements in Angola have ceased fire. Portuguese Government sources said here to-day. They said the pause in the fighting which came into effect at dawn yesterday, was to allow for OAU-sponsored talks in Kampala aimed at a peaceful end to the conflict.

The Portuguese sources said the ceasefire agreement meant none of the three armies could advance beyond positions they held as of yesterday.

Italy Communists will not press for election

BY DOMINICK J. COYLE

ROME, Nov. 2

THE ITALIAN Communist Party has now followed formally the attitude of the Socialists in rejecting the taking of any initiative which could result in an early general election, thus seemingly extending for the foreseeable future the life of the present minority coalition administration of Mr. Aldo Moro, the Prime Minister.

Following the June 16 regional elections here, in which the Communists made sweeping gains, there was widespread speculation regarding an imminent collapse of the Moro government, but the indications now are that the Communist Party in particular is in no mood to bring about a new government crisis.

Sig. Enrico Berlinguer, the

Communist Party's secretary, said following a meeting of the Party's central committee that the Communists have no wish to create political vacuum and therefore were opposed to early national elections. A similar policy statement has already come from the Socialists whose external support has kept the present two-party Government in office.

The immediate strategy of the Communists is relatively simple. The party is anxious to enter Government through the normal democratic process and appreciates that the full realisation of the so-called "historic compromise" can only emerge in a grand alliance with the ruling Christian Democrats shorn of its Conservatism and often neo-Fascist right wing.

Innocenti ultimatum stays

BY DOMINICK J. COYLE

ROME, Nov. 2

INNOCENTI, British Leyland's troubled Italian subsidiary, is apparently maintaining its ultimatum to close down its Milan plant if the Government and the trade unions here do not agree to 1,700 immediate redundancies, or roughly one-third of the company's total labour force, but the deadline has now been moved back from to-morrow.

Innocenti originally announced last November 3 deadline for agreement on a sharp cutback in the Innocenti works were essentially labour force, or alternatively a complete closure of the company, did not require any direct Ministerial intervention or initiative.

Cambodia, Thailand accord

BY OUR OWN CORRESPONDENT

BANGKOK, Nov. 2

FULL diplomatic relations at Choonbavan, said he thought this ambassadorial level between Cambodia and Thailand were announced in a joint communiqué published simultaneously in Bangkok and Phnom Penh to-day, concluding a successful five-day diplomatic mission to the Thai capital led by Khmer Deputy-Premier, Ieng Sary.

The delegates of the two Governments also agreed to open both rail links and liaison offices at border towns. Cambodia will also accept those Khmer refugees in Thailand, estimated at 10,000, willing to return, while Thailand has promised to keep those who stay behind out of politics.

The actual exchange of envoys awaits "a date convenient to both countries," but the Thai Foreign Minister, Chatichai

It was surprising that nothing more substantive on trade came out of the meeting other than the agreement for later discussions. Speculations prior to Ieng Sary's arrival pinned the real motive for his first Khmer visit to a non-Communist capital on urgent need for rice and fuel which the Thais were willing to sell as the price of diplomatic recognition. But diplomatic relations were established without corresponding concrete trade agreements.

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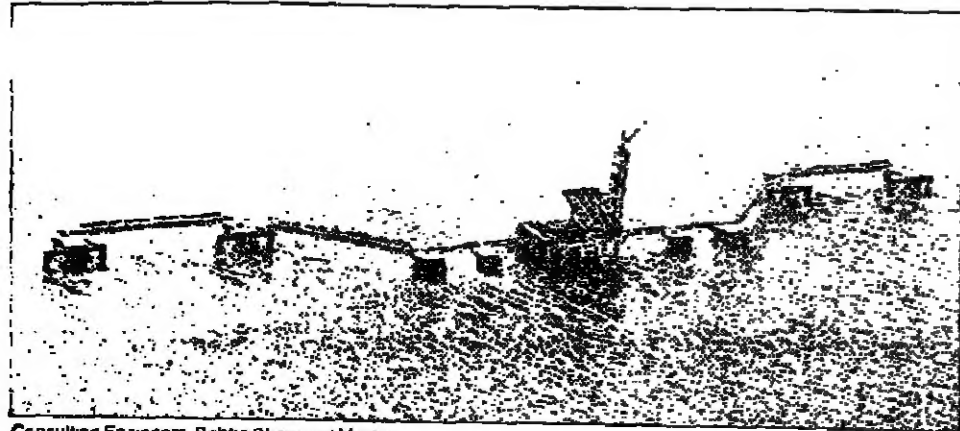
of extremely large diameter piles, was constructed on just 47 piles.

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Argentine Republic

Floating Rate Notes 1977

In accordance with the provisions of the above Notes, Bankers Trust Company, as Fiscal Agent therefor, has established the Rate of Interest on such Notes for the semi-annual period ending April 30, 1976 as nine percent (9%) per annum. Interest due on such date will be payable upon surrender of Coupon No. 11.

Bankers Trust Company,
Fiscal Agent
Dated: November 3, 1975

LABOUR NEWS

Blast furnaces public inquiry starts work to-morrow

BY CHRISTIAN TYLER, LABOUR STAFF

THE BRITISH STEEL Corporation will ask a public inquiry this week to guarantee the future of £500m. of new technology

threatened by a labour dispute with blast furnacemen.

For the BSC, the inquiry is a test case for the whole field of union-co-operation in advanced technology as well as a means of resolving the pay dispute at Llanwern works in South Wales which brought the National Union of Blastfurnacemen to the brink of a national strike in September.

It will be for the three-man tribunal, which starts work to-morrow to decide whether to hear third parties such as the CBI who may wish to refer to other well-known case histories where failure to agree rates with unions has caused expensive new plant to stand idle for months.

BSC will submit a mass of written evidence before oral evidence starts to-morrow and will again stress that it cannot treat blastfurnacemen in isolation from other skilled steelworkers with whom their pay is linked.

The National Union of Blastfurnacemen will argue that the

£10.31 a week rise offered by BSC for operating the new Llanwern furnace is insufficient, especially when set against the £5.50 a week rise for men on other furnaces.

Its evidence is expected also to refer to the difficulty of the work—the NUB often compares itself with the miners in this.

The NUB's case will be influenced by the fact that new technology over the next few years could cut its membership drastically, making this tough and independent union of only 16,000 members more vulnerable still to takeover.

Chris Baser, our Scottish correspondent, writes: There will be a gradual return to normal production at the British Steel Corporation's Ravenscraig plant, Motherwell, this week, following the week-end decision by coke oven employees there to end their 17-day strike.

The Corporation will begin bringing back the 2,000 men it had laid off and expects to have the steelworks operating normally in about ten days.

Building trade meeting on pay

BY OUR LABOUR STAFF

FIRST soundings for the next round of wage negotiations for about 1m. building and civil engineering workers will be taken to-day when unions and employers meet to consider how the cost of living has eroded the last pay deal.

The unions are not expected to press for cost of living adjustments despite a move by the Union of Construction, Allied Trades and Technicians to reopen such a deal, which has been overtaken by the £5 pay policy.

While UCATT voted against the £8 policy other big building unions are committed to supporting it.

Since the present deal expires

next June, the unions may consider whether to wait until the following month when the present policy expires, or whether to start negotiating for the maximum £8 later this year. Employers, especially building employers, will certainly resist a claim for the full £8 because of the state of the industry.

CONSTRUCTION STAFF JOIN APEX

The white-collar Association of Professional, Executive, Clerical and Computer Staff says it has made "big advances" in recruiting construction employees, and now claims a total of 5,000 members in the industry.

Pension and Miners continue bid to buy coking plant

By Our Labour Staff

PROTECTION for jobs in alling industries and for pensions caught up in the economic crisis was advocated by senior TUC leaders at the week-end.

Mr. Jack Jones, general secretary for the Transport and General Workers' Union, revived his long-running campaign on behalf of the old with a call for the Government not to let their standard of living fall during the crisis.

This month old-age pensions are due to rise by £1.70 a week for a single person and £2.70 for a married couple. But, says Mr. Jones, a more up-to-date calculation against prices and earnings would suggest increases of £3.40 and £5.40 respectively. Fairer pensions would cost a great deal, he says, but there would be a saving of £400m. in supplementary benefits.

Meanwhile, Mr. David Bassett, general secretary of the General and Municipal Workers' Union, returned to the attack on unemployment and industrial policy with a speech in Glasgow.

Mr. Bassett called for "urgent new action" on job losses, stressing that there were measures available to the Government that would save on the import bill and on unemployment benefit without damaging the new high-tech industry.

Reminding the Government of the success of the £5 pay policy, Mr. Bassett said this was "remarkable testimony to the restraint and responsibility of the British trade union movement."

DESPITE SERIOUS technical obstacles, talks will continue this week on an attempt by leaders of 60,000 Yorkshire miners to take over and operate a coking plant near Barnsley. The plant, which employs 400 workers, is due to close later this week.

Mr. Arthur Scargill, president of Yorkshire's National Union of Mineworkers, put forward the union takeover plan last week after the National Carbonising Company announced the final closure date. Lengthy attempts had been made to keep open the plant, together with a sister works at Rotherham.

In his closure statement, Mr. Dennis Stroud, NCC managing director, said he had offered both plants free to the National Coal Board if it would operate them. Hours later, Yorkshire NUM officials moved in with their offer to take on the Barnsley plant—if it were given it free.

Land price

Snags emerged, however, when the union was told that the free offer did not include the exclusive acreage of land involved.

Mr. Scargill said at the week-end that despite offers by NCC to discuss a medium-term rental agreement, the whole problem now hinged around the land.

Some of this land is apparently mortgaged to the NCC bankers, and it is not yet known what their attitude to Britain's first ever formal trade union co-operation will be.

Mr. Scargill said: "I have re-

peated to NCC that our offer to take the plant off their hands and operate it, still stands. But this must include the land. We are willing to discuss some payment to the company for the coke in stock."

Convinced

Union leaders are convinced that they could speedily organise a union co-operative to run the plant at a profit, despite the obvious need for considerable capital expenditure.

Although the Yorkshire NUM is extremely wealthy by provincial trade union standards, it is considered unlikely that the union itself would attempt to finance any large-scale modernisation. An approach to the Government would seem likely if the takeover succeeds.

Another factor in the affair is the need by local glass companies for the coke oven gas produced at the plant. This is important, locally, as a glassworks fuel.

Hoover strike goes on

A strike by 140 machine setters at Hoover's domestic appliance plant in Cambuslang, near Glasgow, is to continue. The strike—over the filling of vacancies and upgrading jobs—has so far caused 2,000 people to be laid off.

The men decided unanimously over the week-end to continue the stoppage and do not expect to meet again until Thursday.

BOND DRAWING

TELEFONAKTIEBOLAGET L M ERICSSON 9½% Bonds 1985

S. G. Warburg & Co. Ltd., announce that the redemption instalment of U.S. \$1,250,000 due 1st December, 1975 has been met by purchases in the market to the nominal value of U.S. \$200,000 and by a drawing of Bonds to the nominal value of U.S. \$1,050,000.

The distinctive numbers of the Bonds, drawn in the presence of a Notary Public, are as follows:—

12	40	67	94	122	150	177	204	232	258	287	315
341	370	396	425	450	478	508	534	561	588	616	643
670	699	725	754	780	807	836	862	891	918	945	973
1000	1757	1783	1812	1839	1866	1894	1921	1950	1976	2003	2032
2058	2085	2113	2141	2169	2196	2223	2249	2278	2307	2332	2361
2387	2415	2443	2469	2497	2525	2552	2580	2607	2635	2660	2690
2718	2744	2773	2798	2826	2855	2882	2909	2936	2964	2991	3018
3046	3074	3102	3127	3156	3184	3210	3236	3265	3293	3322	3348
3375	3402	3430	3459	3485	3513	3539	3568	3595	3621	3651	3677
3704	3733	3759	3787	3813	3842	3870	3898	3926	3951	3980	4008
4035	4063	4089	4117	4145	4171	4199	4227	4255	4286	4412	4442
4470	4495	4524	4550	4576	4606	4632	4661	4688	4718	4742	4770
4798	4824	4853	4880	4907	4936	4961	4988	5018	5045	5072	5099
5127	5154	5182	5209	5235	5265	5292	5318	5347	5373	5401	5429
5456	5483	5511	5536	5564	5594	5621	5656	5679	5702	5731	5758
5784	5811	5839	5864	5892	5920	5947	5978	6008	6031	6051	6071
6144	6173	6200	6228	6254	6282	6309	6338	6366	6381	6420	6447
6474	6502	6526	6554	6584	6614	6646	6666	6696	6724	6759	6805
6834	6860	6887	6917	6943	6972	6998	7025	7054	7080	7108	7151
7179	7206	7233	7260	7288	7316	7342	7370	7401	7429	7455	7483
7510	7538	7517	7634	7690	7717	7744	7771	7799	7827	7855	7881
7908	7937	7964	7990	8016	8046	8074	8101	8129	8156	8183	8212
8238	8265	8292	8320	8348	8376	8404	8431	8459	8486	8513	8541
8587	8595	8622	8656	8682	8708	8736	8765	8793	8837	8884	8681
8919	8946	8973	9001	9029	9055	9083	9111	9138	9165	9192	9220
9249	9275	9302	9330	9357	9387	9413	9440	9466	9495	9521	9550
9577	9605	9632	9659	9722	9750	9802	9825	9857	9884	9910	9940
9967	9994	10022	10048	10077	10104	10132	10158	10186	10214	10263	10278
10297	10335	10372	10408	10447	10474	10501	10528	10555	10583	10612	10639
10668	10695	10722	10749	10776	10803	10830	10857	10884	10911	10938	10965
10985	11022	11050	11077	11104	11131	11158	11189	11216	11242	11271	11297
11326	11352	11380	11409	11435	11462	11490	11517	11545	11572	11600	11627
11655	11681	11708	11738	11765	11792	11819	11848	11874	11902	11928	11956
11964	12012	12038	12066	12093	12124	12152	12179	12206	12234	12260	12298
12314	12342	12372	12399	12428	12454	12482	12508	12536	12564	12590	12618
12646	12672	12702	12727	12755	12783	12810	12837	12866	12890	12914	12948
12975	13003	13032	13060	13088	13116	13144	13172	13200	13228	13256	13284
13304	13331	13370	13396	13425	13453	13481	13506	13536	13563	13591	13619
13645	13682	13710	13736	13765	13790	13817	13847	13874	13901	13928	13956
13983	14010	14038	14065	14094	14121	14147	14176	14202	14230	14258	14285
14314	14340	14367	14395	14424	14451	14477	14505	14532	14560	14587	14613
14643	14670	14697	14725	14751	14779	14807	14834	14862	14889	14917	14942
14968	14995	15022	15049	15076	15103	15130	15157	15184	15211	15238	15265
15300	15328	15354	15383	15411	15439	15466	15492	15520	15547	15574	15604
15629	15657	15685	15712	15739	15766	15795	15821	15850	15877	15903	15929
15958	15986	16015	16041	16069	16095	16123	16151	16179	16206	16232	16261
16269	16314	16343	16370	16398	16427	16452	16480	16507	16535	16563	16590
16618	16658	16672	16696	16726	16756	16781	16810	16837	16864	16892	16918
16947	16975	17003	17029	17056	17084	17111	17138	17165	17192	17219	17246
17275	17304	17331	17358	17385	17413	17441	17467	17495	17522	17551	17579
17604	17633	17659	17687	17716	17742	17770	17797	17824	17851	17879	17906
17934	17962	17989	18017	18044	18070	18100	18127	18154	18182	18208	18236
18264	18291	18319	18346	18374	18399	18428	18456	18483	18511	18537	18566
18592	18619	18646	18675	18694	18713	18738	18765	18791	18814	18840	18864
18893	18949	18976	19003	19031	19061	19088	19116	19142	19168	19195	19221
19252	19297	19307	19334	19360	19389	19416	19443	19472	19498	19527	19553
19580	19608	19636	19663	19690	19717	19745	19771	19800	19826	19853	19883
19909	19937	19965	19992	20019	20047	20075	20101	20129	20156	20183	20213
20238	20267	20294	20321	20348	20376	20404	20432	20460	20486	20513	20541
20568	20596	20624	20652	20680	20708	20736	20764	20792	20819	20846	20874
20897	20924	20952	20980	21008	21035	21061	21089	21117	21144	21172	21199
21227	21255	21281	21308	21336	21365	21391	21419	21446	21474	21501	21527
21567	21584	21611	21639	21666	21693	21722	21748	21775	21803	21831	21857
21895	21912	21940	21968	21995	22022	22050	22076	22104	22133	22160	22187
22204	22231	22259	22286	22313	22340	22367	22394	22421	22448	22475	22502
22544	22571	22599	22626	22652	22681	22709	22736	22764	22790	22818	22846
22873	22900	22928	22956	22983	23010	23037	23064	23094	23120	23147	23175
23202	23228	23257	23285	23312	23340	23366	23394	23422	23449	23476	23504
23532	23558	23586	23613	23640	23670	23696	23723	23751	23778	23805	23833
23861	23889	23916	23943	23970	24000	24026	24053	24080	24107	24134	24162
24189	24218	24246	24272	24300	24327	24354	24382	24409	24437	24464	24492
24519	24547	24574	24601	24629	24657	24683	24712	24738	24765	24795	24821
24848	24876	24903	24930	24957	24985	25014	25063	25090	25118	25144	25172
25200	25227	25255	25282	25310	25338	25366	25391	25419	25447	25474	25501
25530	25558	25586	25613	25640	25668	25693	25721	25748	25776	25805	25832
25861	25889	25914	25940	25967	25993	26020	26047	26073	26101	26127	26154
26190	26217	26245	26272	26298	26327	26355	26381	26410	26436	26464	26491
26518	26547	26574	26601	26628	26656	26684	26709	26736	26766	26793	26822
26847	26875	26903	26931	26958	26985	27013	27040	27067	27095	27122	27151
27177	27204	27233	27259	27286	27314	27342	27371	27397	27424	27451	27479
27506	27533	27561	27588	27615	27643	27671	27698	27725	27752	27779	27806
27836	27862	27891	27918	27946	27974	27999	28028	28055	28083	28111	28139
28165	28193	28219	28247	28275	28303	28328	28357	28385	28411	28438	28466
28494	28523	28549	28577	28603	28631	28651	28686	28714	28741	28769	28795
28823	28852	28878	28906	28933	28960	28989	29014	29043	29071	29098	29126
29152	29182	29206	29236	29263	29288	29318	29344	29371	29400	29427	29455
29483	29509	29537	29561	29585	29609	29634	29675	29692	29768	29795	29823
29849	29877	29905	29932	29961	29985	29985					

Piping in the oil

Today Britain receives her first continuous flow of British North Sea oil.
It's from the Forties field.
The first-fruits of an enormous investment of faith, skills and money.
It's yet another 'first' for BP.

Today, British oil starts flowing continuously through the pipeline linking BP's Forties field 110 miles out in the North Sea with the Grangemouth refinery.

An historic day for Britain. And for BP.

It's only one of a number of 'firsts' chalked up by BP in the North Sea over a decade.

BP were first to find North Sea gas and pipe it ashore for British homes.

BP were first to find a major oilfield in the British sector.

BP were first to install four production platforms in less than a year.

Congratulations to British Industry on the considerable technical achievement that made this possible and resulted in the last two platforms being built way ahead of schedule.

BP have invested £750 million in the North Sea. An investment in Britain's future that is now bearing its first-fruits. By 1977, a quarter of Britain's total oil needs will be met from the Forties field alone, greatly benefiting the country's balance of payments.

What else has all this meant to Britain?

Work for British Industry. Of the huge outlay on the capital goods for BP's North Sea programme, the greatest part was spent with British firms.

New, highly skilled labour for Scotland. BP have paid for the training of 1,700 men in a diverse range of engineering skills.

Environmental care. Protecting the environment — on and offshore — was a primary consideration throughout the project. Scottish farmers, fishermen and conservationists all complimented us on the care we took.

Piping in the British oil is an achievement of which BP and their British-led international team can feel proud. Through their advanced technology and engineering skills, BP have won their place in the forefront of offshore operations.



**First in the North Sea
and proud of it.**

Energy sense is common sense.



The Executive's World: The Office

EDITED BY JAMES ENSOR

Last Friday the Mail Users' Association confronted the Post Office. Roy Levine reports on the talks and explains why we may be

Paying more for less at the Post Office

"THE PUBLIC has the wrong idea about what is a fair postal price," says Mr. Alex Curral, managing director of the Post Office's postal division. His attitude reflects the defensiveness of the Post Office following the public outcry at two substantial increases in postal rates this year. Yet, according to Mr. Curral, there could be more increases to come as well as cuts in the service, following the Government's new policy of requiring all public corporations to become profitable.

Addresses

The Post Office has simply not been able to keep its costs down even though the volume of traffic has declined since the peak in 1968. One reason is the steady increase in the number of addresses—about 250,000 new ones each year. About half the total cost of the postal services come from collection, preparation and delivery of letters which are basically fixed charges. With the other half, mainly sorting, there is some scope for reducing overheads by automation, but the trade unions have restricted the use of some of the modern equipment.

Until recently, U.K. postal rates compared favourably with most other countries. Even after the latest round of increases the absolute rates are below average as shown in the table. However, when compared with the general level of costs in each country, the U.K. rates begin to look expensive.

In comparing rates it has to be remembered that the U.K. and France are the only countries which operate a two-tier structure based on speed of delivery.

Another difference is that Britain is now one of the few countries whose postal service is not in principle subsidised by government; the user is being asked to pay for the short-fall, a process that hurts until it becomes custom. Not all users, of course, will take kindly to this. Business—which accounts for about a third of total traffic—is already mobilising itself to reduce non-essential mail costs. Companies are recommending economies to their staff which include dispensing with letters of acknowledgment, using second class mail only, reducing the frequency of postings and, in some cases, organising hand deliveries of letters (which is legal only if your own mail is handled).

In addition, some groups have been organising their own internal postal service. Lloyds Insurance Brokers Association was one of the first to explore this possibility. If it goes ahead it could be seen as a test case for others.

Direct mail and publishing companies, which represent about 15 per cent. of total traffic, have mobilised themselves against the new rates. Readers Digest, which claims to be the biggest Post Office customer with some 80m. items



Mr. Robin Fairlie (left) and Mr. Julian Blackwell, co-founders of the Mail Users Association, in the shadow of the inventor of the Penny Post, Mr. Rowland Hill, at GPO headquarters in London.

posted each year at a cost of around 18m., reckons the latest increase in postal charges will add some £250,000 to the company's bill. Its business vice-director, Mr. Robin Fairlie, together with Mr. Julian Blackwell, a director of the Oxford bookellers, B. H. Blackwell, has formed a new pressure group called the Mail Users Association (MUA). At last month's inaugural meeting over 200 companies were represented: all had annual postal budgets in excess of £10,000 and together represented business worth £50m. a year to the Post Office. "If 10 per cent. of its total deliveries



Mr. Alex Curral, managing director of Britain's Postal Services.

—even though it claims the cost was a mere 3p a letter compared with the 13p charge by the Post Office before rebates. If it were to revive it now, and other members of the MUA did the same, there could be a significant impact on the overall volume of Post Office traffic which has already dropped off by about 7 per cent. following the March price increases and another 34 per cent. since September. These reductions were much in line with the Post Office's forecasts.

"The trouble with relying on historical precedents," says Mr. Fairlie, "is that whereas before increases were of the order of 10-15 per cent., this year's increases were in the order of 50 per cent."

There have been independent forecasts that traffic will now fall quite sharply and perhaps enough to cancel any benefits

from price increases, causing a vicious circle. Certainly, there has been a noticeable swing from first to second class mail, but it would take a dramatic change in past trends before a collapse in traffic volumes.

If the bulk users withdrew from the conventional postal service there would have to be a corresponding rise in rates to allow for the higher costs of handling the difficult traffic.

What the Association wants essentially are: higher volume rebates, Government subsidies for some uneconomic deliveries (such as rural areas) and a chance to assess the Post Office's financial efficiency.

It has long been Post Office policy to give rebates for bulk business. The rebate, determined by negotiation, depends largely on the benefits (apart from bulk) that a user can offer, for example, presenting post in geographical order, and the debate here is purely on the size of the rebate.

Subsidies

As far as Government subsidies for uneconomic deliveries are concerned, such a move seems highly unlikely, especially in the current economic climate, even if it were practicable to divide the service up in this way.

Finally, the request to examine the Post Office books to see where savings can be made is no surprise. There have been 14 inquiries into the P.O. since it was incorporated in 1969; the Government has already announced its support for yet another: the Post Office Users' National Council (POUNC), also set up by the Government in 1969 and a normally quiescent body, recently put forward its recommendations for saving two-thirds of the expected £300m. deficit expected this year without the September price rises.

One conclusion that the MUA will inevitably arrive at is that some services should be cut. In this, they will find complete

A COMPARISON OF POSTAGE RATES (p.)

Country	Inland	Foreign surface letter	Air mail reply to U.K.	Last increase
U.K. (1st class)	8.5	10.0	—	Sept. 1975
Belgium	7.7	11.5	11.5	Dec. 1974
Denmark	7.1	10.2	10.2	April 1975
France	7.0	9.0	7.0	Oct. 1974
Germany (1st class)	8.6	13.0	13.0	Sept. 1974
Italy	9.2	12.9	12.9	July 1974
Netherlands	7.1	10.7	10.7	March 1975
Brazil	9.0	10.8	10.8	April 1975
Japan	3.0	10.4	10.4	Jan. 1975
U.S. surface airmail	3.2	8.1	16.2	Nov. 1973
	4.9	8.3	—	March 1974
	6.4	—	12.8	March 1974

Sterling equivalents converted at rate of £2.03=£1.

accord at the Post Office as well as at POUNC, even though there may be some disagreement about which services should go up to his Association to negotiate actual contracts—that is, public support for cuts.

Mr. Curral claims that there is public support for cuts. "Over the past nine months we have received an increasing volume of criticism that our postal services are too generous." Recent meetings with businessmen, local authority managers and MPs in Manchester and Birmingham have made him doubly convinced.

He has made four proposals which were rejected by POUNC (which has its own list) but are being discussed with the Government. The proposals are: eliminating Sunday collection; closing all Post Offices on Saturday afternoons; eliminating the second rural delivery; and reducing late collections (7 p.m. and after).

While the proposed cuts could save the Corporation about £20m. an additional £p on postage rates would produce nearly twice that amount. That is one reason why, despite the cuts in services, rates will tend to increase anyway.

After the publicity build-up to last Friday's talks between the MUA and the Post Office, the event proved to be something of a damp squib.

Although Mr. Fairlie expressed his support for higher volume rebates, he made clear to Mr. Curral that it was not up to his Association to negotiate actual contracts—that is, public support for cuts. "Over the past nine months we have received an increasing volume of criticism that our postal services are too generous." Recent meetings with businessmen, local authority managers and MPs in Manchester and Birmingham have made him doubly convinced.

Redundant over twenty-five!

BY SONIA MARKS

The personnel officer was very sympathetic. "I'm so sorry," she commiserated. "You didn't get the job," hastening to reassure me "... but he was quite torn. Believe me, Mrs. Marks, it was neck and neck." I believed her. I had a glimpse of that other neck. It belonged to a young 20-year-old girl and was framed with long, flowing hair. Mine, on the other hand, though prudently concealed in a high polo-necked jumper, was decidedly middle-aged. If it was a question of necks, I didn't stand a chance!

The two of us were short-listed for the job of secretary to a professor at a local research hospital. She went in first and when I stepped into his office half an hour later, the expression on his face told me all I needed to know. "Torn?" Hardly. The interview was brief. But he was kind. "I'm worried about your children..." he confessed. And glanced at his watch.

I shared his solicitude. I, too, was worried about my children—two teenage daughters... and my freelance writer husband, more free than lance... and the leaping cost of living. That's why I decided to go back to work. It wasn't really a case for the NSPCC. But how to convince the Professor? He'd already seen that other neck!

It's been a touching experience, the amount of consideration that's been shown towards my family since I started job-hunting. And all of it from middle-aged men. The Professor wasn't alone in expressing concern.

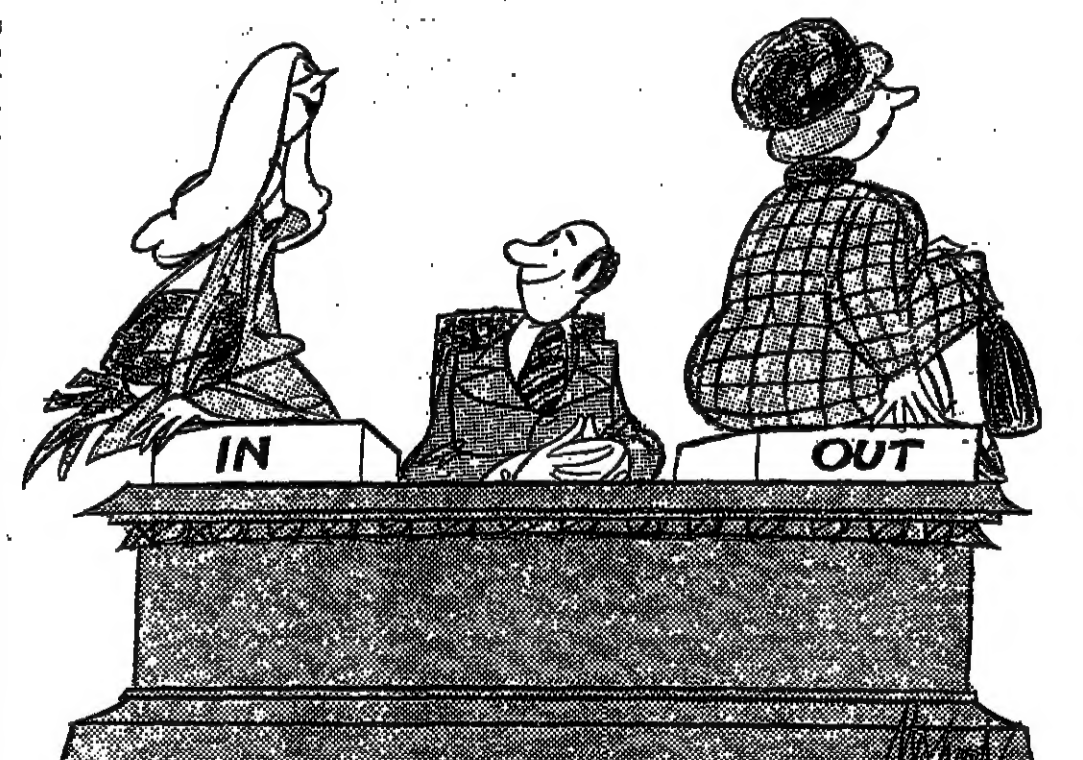
The left-wing trade union secretary was anxious to know whether I had first "consulted" my husband about the interview and plan to return to work. It was, I assured him, a mutual decision. He remained doubtful. "And how will he feel when his supper isn't put on the table in front of him on time?" he asked.

The sales director of a print firm emphasised: "... this is not the kind of job you can simply forget about when you get home at night..." urging me to tell him "... frankly..." would your husband be willing to spend the evenings discussing your day's work?

To be just, this firm advertised for a 21-plus. But as they were round the corner, I inquired what the possibility was of stretching the "plus."

Personnel Officer, being a man, and only succeeded in enough to an interview (was the case) as was amenable. He had set his heart on a 21-plus!

I wonder how he put the job to her. I visualised her dancing at the disco—liquid knees and



Slickering hands—waiting anxiously for a pause in the pounding music to conscientiously whisper in the current boyfriend's ear, the weighty printwork problems of the day. The builder in a small office on a large trading estate again took up the cause of my children. "I am nervous," he admitted bluntly: "about how they are going to get home at night on their own..." I told him that it was only a ten minute bus journey and they were, after all, 14 and 16. "I'd be worried sick," he muttered accusingly. But pressed on: "And what about their health? Are they in good health then?" Perfect. Thank God! But I could see, there was no consoling him: he became gloomier and gloomier, before asking sharply: "Your speeds... are they high?" (was there a hint of optimism in his voice?) Yes, I admitted. "Well... I'm not exactly looking for someone with high speeds..." triumphant at last...

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meticulous searching, did I see an advert for a secretary: "... between 30 and 35," startlingly original and submitted by an American law firm in the city.

For the rest, an entire generation—my generation—of skilled secretaries has been wiped off the face of the earth.

There is a fantasy world in which men see themselves in relation to their secretaries, in which the over-forties simply do not exist.

Fantasy? Even Freud would have been hard pushed to explain the subconscious yearnings expressed in some of today's newspaper advertisements. What, one wonders, would he have made of:

"Secretary for Four Father Figures."

"Dynamic sales director whose secretary, early 20s, must look after him and three managers. All pleasant people and ingenious exclusion by far in their 40's, so their secretary must be the type who is adaptable and enjoys working for mature, silver-tongued gentlemen—just like Dad."

Could he have explained why the gentleman searching for: "... a well-groomed, adaptable, charming secretary, radiating savoir-faire and finesse..." insisted that she should be "23-ish"? Why exactly 23-ish? Why not 21-ish? Or 24-ish? Or for that matter, 46-ish? Such precise specifications for the "During lunch" said the Sec. as she shook her grey locks. "I'll keep all my limbs very supple."

"Senior Secretary. Bright and conscientious." Only to be dashed by the "I'll perform entrechats at the double."

"Minimum one year's experience."

My twelve years suddenly seemed a crippling handicap. In the old days Mothers were warned not to put their daughters on the stage. Judging by the advertisements, it must be safer nowadays than becoming a secretary.

Sometimes all you have to be is young, even if totally devoid of skill or talent. Under the heading:

"Youth on your Side" the advertisement sympathised: "How often have you wanted to work for a director only to be told you are too young or too inexperienced? A West End company needs such a secretary. Age 18 plus. Salary £2,000."

So much for my glowing testimonials. At 40 plus, who needs them? But perhaps the most subtle and ingenious exclusion by far in this age group was dreamed up by a ballet school advertisement for:

"Secretary to Chief Executive. Interesting, varied, responsible position. Plus the opportunity of taking ballet classes during the lunch hour."

As my family pondered the spectacle of their mother pre-senting herself at the dance studio in leotards and pumps, hysteria overwhelmed them: "During lunch" said the Sec. as she shook her grey locks. "I'll keep all my limbs very supple."

"If I get this appointment—and nobody mocks—I'll perform entrechats at the double."

How to miss opportunities

Every department of every business needs the Financial Times—daily. Because they all need up-to-the-minute business intelligence.

Circulating one or two copies just isn't enough. That's why all departmental heads and key employees should have their own copies of the Financial Times.

In these competitive times everyone in business needs the Financial Times

Handwritten note: "Handwritten note: ..."



**-Richard Farmer,
Managing Director of
Atlas Express Group
Limited at Rotherhithe.**

Atlas Express is one of Britain's largest independent and privately owned freight carriers.

In 1863, village carriers still carried goods from street to street, while the new railways carried them from town to town.

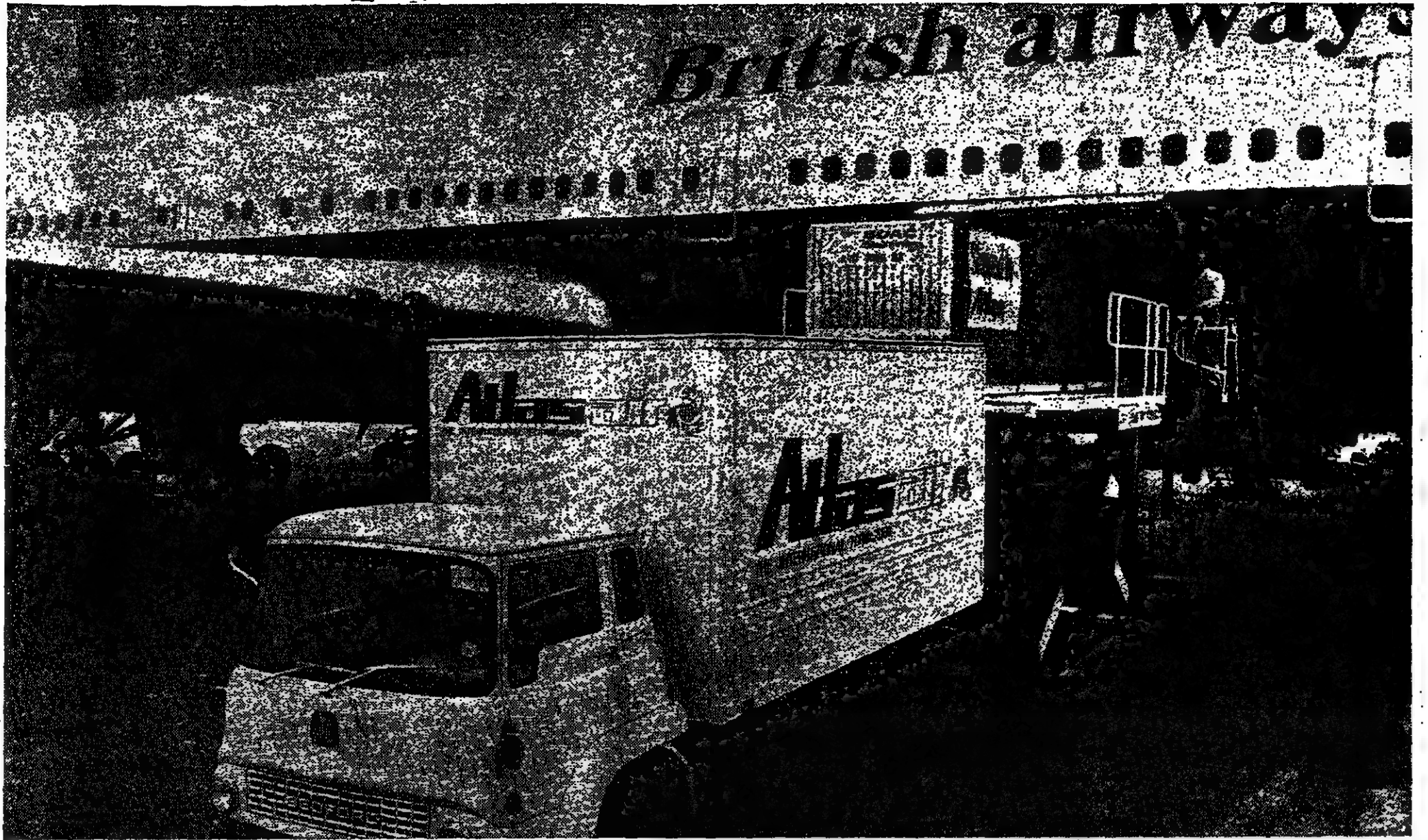
What was needed was a fast, efficient service for getting goods from a street in one town to a street in another.

Atlas Parcel Express, as it was then called, was among the first to fill the gap.

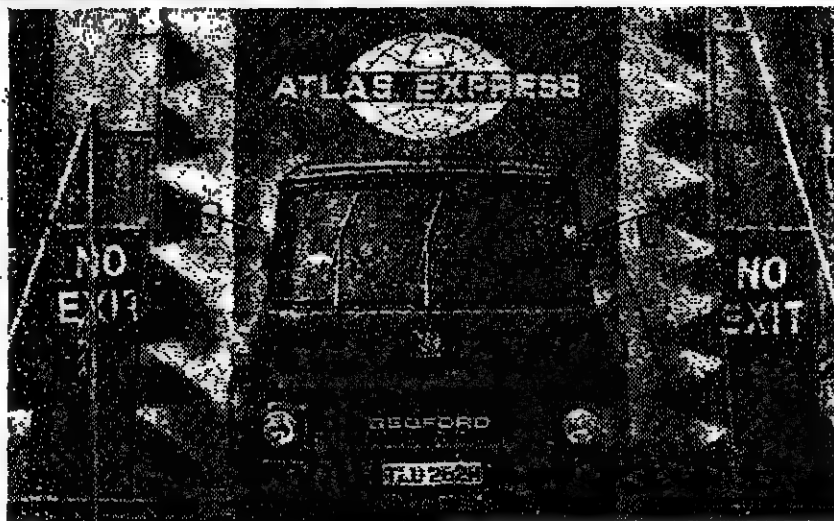
Growth and modernisation

Shortage of manpower during and following the First World War drastically affected the company and when Richard Farmer joined in 1935, during the chairmanship of his father, it had still not recovered fully.

"Midland Bank plays an essential part in our organisation-just as we play an essential part in world trade"



Atlas covers Britain through over 50 collection and delivery centres.



One of the Atlas vehicles passing through an automatic cleaner.

outlay for depot space, buildings and vehicles.

"In 1921, the company had to raise £2,250 in 5s. shares—a largish sum for those days—in order to continue. The shareholders responded, and since then they and Midland Bank have provided all the resources needed for our expansion."

International expansion

1947 was a major turning point for Atlas Express, as it then found itself one of the country's few sizeable independent freight companies.

"Today, with Midland Bank's help," says Richard Farmer, "we have a large fleet of modern vehicles

More than 600 vehicles collect and deliver daily.



and employ around 2,000 people in more than 30 depots. Our Rotherhithe depot alone covers 3½ acres."

Atlas Express delivers and collects world-wide through a large international network of freight agents, and has set up two other companies. Atlas Air, at Feltham, to handle purely air freight, and Eurofreight, to handle cargo on a continental basis.

"Midland Bank has always given us magnificent service," says Richard Farmer. "In fact all our directors and virtually all our staff here bank at the Midland privately."



Atlas Air HQ is Britain's first specifically designed consolidation centre.

"But most of all, the Midland has enabled us to grow on the scale needed for an international freight business—without ever having to go outside our close relationship with them for financial help or services."

As every successful business knows, expansion brings its own problems. It calls for new kinds of financial service. If it's your problem, why not talk it over with your local Midland manager?

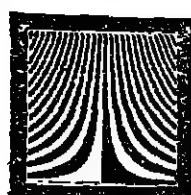
He and his fellow directors set about modernising the company with the help of Midland Bank.

"But modernising a transport business," says Richard Farmer, "involves hefty capital



Midland Bank Group

Principal trading companies: Midland Bank Limited, Clydesdale Bank Limited, Clydesdale Bank Finance Corporation Limited, Clydesdale Bank Insurance Services Limited, Scottish Computer Services Limited, Northern Bank Limited, Northern Bank Development Corporation Limited, Northern Bank Executor and Trustee Company Limited, Northern Bank Trustee Company Limited, Midland Bank Trust Company Limited, Midland Bank Finance Corporation Limited, Forward Trust Limited, Midland Montagu Leasing Limited, Griffin Factors Limited, Midland Bank Trust Corporation (Jersey) Limited, Midland Bank Trust Corporation (Guernsey) Limited, Midland Bank Insurance Services Limited, The Thomas Cook Group Limited, Thomas Cook Limited, Thomas Cook Overseas Limited, Thomas Cook Bankers Limited, Samuel Montagu & Co. Limited (Incorporating Drayton), Drayton Montagu Portfolio Management Limited, Northern Bank Finance Corporation Limited, Midland Montagu Industrial Finance Limited, Jersey International Bank of Commerce Limited, Bland Payne Holdings Limited, Bland Payne Limited, Bland Payne Reinsurance Brokers Limited, Bland Payne (UK) Limited, Southern Marine & Aviation Underwriters Inc., Bland Payne Australia Limited, Guyerzeller Zuercher Bank A.G.



The Technical Page

EDITED BY ARTHUR BENNETT AND TED SCHOETERS

ENERGY

Question of make or break

IN ONE of the most thought-provoking studies it has issued in recent years, Frost and Sullivan has predicted that to match the 20-fold growth in nuclear power by 1990 compared with a mere 4 per cent. now, in Britain, growth is predicted to be extremely slow by comparison with only 16 per cent. atomic electricity in 1985 against 9.3 in 1970.

Capital requirements for the whole of Europe will vary between \$5,250m. and \$6,500m. a year to 1985, cost of a nuclear station being assumed at about \$238 per kW, excluding the first load of fuel—also a major factor, especially as the light water reactors which will dominate the scene till the end of the century.

The report details the various shares of physical plant com-

ELECTRONICS

Replacing gold in electronics

FOR PLATING on semiconductor devices, printed circuit boards and connector contacts, a low boron, phosphorus-free electroless nickel process, Niposit 468, is available from Shipley Chemicals, Hummer Avenue, Coventry (0263 457263). Deposits are at least 99.5 per cent. pure nickel and the remainder boron, says the maker.

Because of the improved ductility of nickel-boron deposits, their high temperature resistance (400-500 deg. C), good solderability and weldability, low electrical resistivity, high hardness and wear resistance, Niposit 468 is seen as a possible replacement for gold in numerous electronics applications, the company states.

COMPUTERS

More power at less cost

BY PUTTING together 32 computers on a chip in a stack called Hypercube, DMS Associates Inc. (Imperial) of San Leandro, Calif., U.S., is offering the processing power of the 380/65 (\$1m. further add. more or less) for only \$80,000.

And if the progress of solid-state technology needed to be rubbed in any more, the same company will stack together the same Intel 8080—but this time in a 132 array—to provide the processing power of the IBM 370/195 for \$400,000, or say one-tenth of the cost of that machine.

It is quite possible to continue up the scale and get a Hypercube which is far beyond the "processing size" of any computer so far proposed for commercial use—and still be in the cost area of a medium-scale conventional data processing system as proposed and installed by every manufacturer at the moment.

This development is the logical outcome of progress on microcomputers and, at the same time, array processor work first undertaken as a support system for the ABM. It would be useless if the designer had neglected the serious problem for the user of how to connect work into such a powerful system. But this key point has not been disregarded.

current drive into the commercial marketplace. Varian is able to offer a complete small business system with the advantages of COBOL, RPG II and TOTAL for around £30,000.

Varian 64k semiconductor memory is an option for the V76 computers. It is a dual-port, random-access memory with a capacity of 65,536 16-bit or 18-bit words and is packaged on a single printed-circuit board. The 16-bit version is available without parity. The 18-bit version provides storage for words with two parity bits (one for each byte). Cycle time for both models is 660 nanoseconds with an access time of 560 nanoseconds.

The 4k random access-memory (RAM) used in the Varian design is a departure from other RAMs in that it utilizes N-channel architecture with a high-density metal-oxide-semiconductor (MOS) substrate. This new architecture provides about the same performance as a core memory of equal speed and capacity at one-third the cost.

Furthermore, the dual-line package of the RAM permits the layout of the entire memory on a single V70 series printed-circuit board occupying only one card slot in the computer chassis.

The dual-port feature of this memory provides simultaneous access to two different portions of memory from two different processors. When used with the memory map option, the memory can be expanded up to 256k words.

DC power for the operation of up to 64k semiconductor memory boards is provided by the main power supply of the computer although an additional power supply is required for the memory map when used with an expanded system. Since the 64k semiconductor memory is volatile, an optional battery-powered Model 76-3200 Data Saver is available to prevent loss of data in the event of a power failure.

THE SWIFT WINNING NORGAEN OLYMPIAN PLUG-IN-SYSTEM

Design Council Award 1974

COMPRESSED AIR PROCESSING EQUIPMENT

Varian is at Russell House, Molesley Road, Walton-on-Thames KT12 3PT. Walton 28971.

System B is highly tunable

EARLY results from operating System B on an ICL 2970 machine are better than expected, according to Basil Cousins, head of Computel which is using time on the 2970 at W. H. Smith and Son, Swindon.

Computel has given clients the opportunity to see Smith's new machine in operation and is offering 2800 facilities—the first commercial bureau to do so.

Computel was the first commercial bureau to use the George 3 operating system, and in the beginning throughput rates were as low as 10 jobs an hour in prime shift. By tuning the system (Computel built up to 40 jobs an hour).

With System B the bureau expects the early throughput rates to be around 15 jobs an hour but within three years 80 jobs an hour should be achieved.

System B is the much-criticised operating system for 2800 machines.

Computel is at Eastern Road, Bracknell, Berks, 0344 23032.

By agreement between the Financial Times and the BBC, information from The Technical Page is available for use by the Corporation's External Services as source material for its overseas broadcasts.

POLLUTION

Measures density of smoke

SIEMENS has a smoke density monitor for use in the ducts and chimneys of small- and medium-capacity industrial plants.

Continuous-measuring, it has a combined transmitter/measuring head and separate receiver. The former requires a 110 V or 230/240 V, 50 Hz mains supply and both units have facilities to use a low-pressure air source for scavenging and cleaning purposes.

Two beams of white light, one passing through the smoke or dust, and one reference beam are compared.

When the measuring beam's intensity is reduced by smoke or dust, the reference beam's intensity is equally reduced. This reduction of intensity is a measure of the smoke or dust content. The beam comparison is made by a photocell and amplifier alternatively measuring the relative light values.

The measuring head produces a linear output signal of 4 to 20 mA proportional to a selected measuring range of 0.100 per cent, 0.50 per cent, and 0.25 per cent.

opacity. The output signal can be fed to controllers, indicators or recorders. The measuring head can also be calibrated for a given level of concentration, which if exceeded, causes the monitor to produce an alarm signal.

Siemens, Great West House, Brentford, Middx. (01-838 9133).

INSTRUMENTS

Accurate gauge head

A NEW universal "miniature length measuring instrument" in the form of a digital gauge head is being brought to the market by Dr. Johannes Heidenhain. This instrument, for application in workshops and standard rooms, surpasses dial test indicators, vernier calipers or analogue measuring heads both technically and economically. The digital gauge head is also designed as a measuring system for length measurement on smaller machines, micrometer stages, coordinate tables, cam inspection, etc.

The measuring range of the digital gauge head MT 10 is 10 mm. The resolution (digital step) in conjunction with the appropriate counter is 1 micrometre. The measuring accuracy

of the complete system, that is, digital gauge head with counter, is ±1 micrometre. A specially incremental design principle and the very minimum of mechanical components enable a high degree of accuracy to be constantly maintained for an unlimited time. A special feature is the remarkably small size of the main body (57 x 30 x 12 mm.) which simplifies application on multiple measuring devices having narrow clearances. The clamping shaft has a diameter of 8 mm, which enables further utilisation of general measuring equipment and fixtures.

Measured value is indicated by a five-digit, seven-segment LED display with arithmetical sign and decimal point. Character height 13 mm.

As an option, the counter can be supplied with a printer output for electronic processing of measured values. A special advantage is the simple zero reset which is carried out by merely pressing the reset push-button at any random position within the measuring range, thus eliminating tedious adjustment.

Longer measuring lengths are under development and gauge heads with measuring range of 30 mm. will shortly be available. Heidenhain (GB), 202 London Road, Burgess Hill, Sussex RH15 9RD. Burgess Hill (04446) 3986.



This rotary drilling rig is the latest to be produced by Pilon Engineering. The company says it is designed for the larger diameter diamond core drilling operations. In addition it will drill up to 8 inches diameter rotary percussion air-blast holes using a down-the-hole hammer — and is therefore well suited to shallow mineral

exploration. Called the Pilon Traveller 36 it is hydraulically operated and has a lattice mast carrying a rotary head suitable for coring, angering and rotary percussion drilling. The drill is powered by a 30 hp air-cooled diesel engine. The equipment is supplied as standard on a two-wheeled trailer fitted with three stabilising jacks. Pilon is a member of the Cestain Group.

RADIO & TV

Speeds the outside broadcast

SPECIALIST communications equipment which could make a significant contribution to the design approach in the multi-million-pound TV outside broadcast and sound and TV studio market has been displayed by Link Electronics.

The 700 Series equipment covers audio communications products which can be built up into complete communications and talk-back systems, as well as two solid state telephone exchanges for use in both outside broadcast vehicles and studios.

The significance of the new equipment is such that Link has established a complete new communications group at its factory in Andover.

Link's decision to design and manufacture such equipment was based on a number of

factors—increasing demands on Andover, Hants. Andover (0264) 61346.

television mobiles and the growing importance of comprehensive talk-back systems as required in broadcasting.

There was no commercially available range of standard compact and modular equipment which was flexible enough to satisfy the needs of broadcasters and systems equipment manufacturers.

The equipment was initially developed by Link for use in outside broadcast units and television studios that they were building. It was then refined into a range of standard equipment which could be offered generally. Link has already supplied several systems so far, and is also using the products on two current projects — an outside broadcast unit for Radio Telefís Éireann in Dublin and for all the talkback communications at the London control centre at the new Forces Broadcasting Network.

Link Electronics, North Way, (0223) 55955.

Pye move in cable TV

LABGEAR (Pye Group) is marketing jointly with Belling and Lee the full range of Belling-Lee cable television distribution equipment and related accessories.

From January 1, 1976, Labgear will take sole responsibility for the direct marketing and service of all cable television distribution equipment and accessories carrying either brand name.

Belling and Lee will continue to design, manufacture and supply passive electro-mechanical cable television accessories to cable television customers with sales branded under the name of the customer organisation.

Pye, St. Andrews Road, Cambridge CB5 1DP. Cambridge

SAFETY

Detector is produced cheaply

A SILICON chip, a bicycle handle grip and a rubber ball from a cistern have contributed considerably to the development of a Southern Gas leak detection unit.

Its scientific services department based in Poole has built a lightweight and low cost detector for combustible gases and because the number required at the moment—40—for the region is considered too small to be worth putting to an outside contractor, the units are being built in-house.

The grip goes on the handle of the walking-stick type probe, at the end of which is the silicon device, protected by the rubber ball.

The detector is heated by a current from a battery and provides a measurable resistance. If a gas such as methane is present, the resistance alters to such an extent that the change can easily be detected and an alarm given.

Use of simple components has kept down the cost of the unit which is capable of detecting the presence of combustible gases in air from about 5 to 1,000 parts per million.

Southergas, 161, Abore Bar, Southampton. (Southampton 775544).

CONTRACTS AND TENDERS

PREQUALIFICATION NOTICE 1001

TURKIYE SELULOX VE KAGIT FABRIKALARI

IZMIT KOCAELI TURKEY

Integrated Forest Products MRL, Balıkesir, Turkey

SUPPLY OF MATERIALS AND EQUIPMENT

Turkiye Selulox Ve Kagit Fabrikalari (SEKA), an enterprise organized and existing under the Law of Turkey, will build an integrated forest products complex near Balıkesir. The plant will produce approximately 105,000 m³ of greenwood annually using together with 100,000 metric tons of sawwood annually using thermomechanical refiner pulp and purchased semi-bleached sulphate pulp.

Vendors interested in prequalifying for bidding on the supply of materials and equipment are invited to apply by air express for "Prequalification Inquiry 1001" from

SANDWELL AND COMPANY LIMITED

1550 Albermar Street,

Vancouver, British Columbia

CANADA, V6G 1A4

Attention: Mr. M. E. Thomas

Copies of the application shall also be sent to SEKA as follows:

Turkiye Selulox Ve Kagit Fabrikalari Intermexi

Genel Müdürlüğü

İzmit, Kocaeli

Turkey

Attention: Mr. Hacıoğlu Yüzer

Applications for "Prequalification Inquiry" 1001 close at noon on 5 DEC 1975 at Sandwell's Vancouver Office. All applications shall be in English.

To enable construction schedules to be maintained top priority has to be given to the following major equipment: Crushers, Barkers, Power Boilers, Turbogenerators, Refiners and Newsprint Machines. Companies wishing to tender on this type of equipment should indicate this in the Prequalification application.

ADVERTISEMENT FOR TENDERS FOR ELECTRICAL INSULATORS

Ente Nazionale Energia Elettrica di Somalia wish to invite tenders for the supply of approximately 20,000 sets of porcelain outdoor insulators for the development of their 33kV, 15kV and 380 volt power system. Copies of the specification are available to tenderers who should write or telex quoting reference 7506/5/1 to:

EWBANK AND PARTNERS LTD.,
Prudential House,
North Street, Brighton,
Sussex BN1 1RW,
United Kingdom

OFFSHORE FINANCIAL CENTRES

AMBASSADOR BEACH HOTEL, NASSAU
11 & 12 NOVEMBER 1975

A conference organised by the Financial Times and The Banker

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The Central Bank of the Bahamas
 - Mr R W Bryan
Bank of Montreal (Bahamas & Caribbean) Limited
- Speakers will include:
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Mr J F Chown
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The Central Bank of the Bahamas

The fee of U.S.\$50.00 (£18.00) covers all refreshments, cocktails, lunches, a cocktail party, an evening of 11 November, conference documentation, including OFFSHORE INVESTMENT CENTRES.

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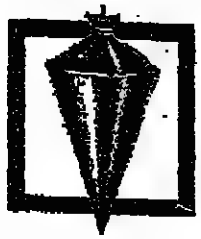
Company _____

Address _____

Please send me further details ☐

Signature _____ Date _____

The Financial Times Ltd 333 Strand, London WC2R 0LT



Building and Civil Engineering

Pipelaying and sewer work

PIPELAYING and other civil engineering contracts totalling more than £3m. are to be started shortly by H. O. Andrews of Oakwood Lane, Leeds.

The largest, worth over £1.7m., is for the construction of the Hyndburn Valley Sewer for North West Water Authority. Eight river crossings, one through a weir, form part of the contract and there is a substantial amount of pipe jacking, pipeline in heading and tunnel work using 1,520 mm internal diameter precast concrete bolted segmental rings. Consulting engineers are J. D. and D. M. Watson.

Other contracts for H. O. Andrews include construction of the Bradford foul sewer for City of Coventry (£750,000), trunk sewers for Washington Development Corporation and twin reinforced concrete culverts in a shielded culvert under a canal for Rushcliffe (Notts) District Council.

£3m. worth for Turriff

TURRIFF Corporation has won contracts worth over £3m. Among them is a District Centre at Longsight for the Manchester City Council worth £750,000. Another contract worth over £1m. is for the Ministry of Defence at Longtown, Cumbria, and a third job involves further work on the Armstrong Cork flooring plant at Thornaby-on-Tees. The value of the first phase of this contract is £1m.

Bungalows in Bahrain

SYSTEM-BUILT bungalows are to be constructed in Bahrain by McPlan Homes a subsidiary of McInerney Properties under a £750,000 contract.

The bungalows will provide accommodation for pilots and staff of Gulf Air, Bahrain's state-backed airline. Wall units, panels, joinery work and doors will be manufactured in Ireland and exported.

Warehouses and water jobs

TWO CONTRACTS, each worth about £700,000, have been awarded to Tarmac.

For the Wessex Water Authority, Somerset Recovery Division, the company is to construct a pumping station and rising mains as a development of the treatment plant at Clevedon in Avon. The work involves construction of an underground pumping

station within a circular diaphragm wall, a rising main to the existing treatment works, an extension to the existing 1.5 metre diameter trunk sewer which is to be laid by pipe jacking, and the provision of an emergency overflow and a stormwater sea outfall.

The second job is a distribution warehouse at Tipton, West Midlands, for the Kwik Save Discount Group of Prestatyn. The design and construct project also calls for the demolition of existing buildings and site clearance, lorry park, clear car park and roads and hardstandings.

Permanite, a Tarmac Group company manufacturing roofing materials, mastic asphalt and associated products, has been invited to take part in bridge surfacing trials in America which could open up a new field of operations for the organisation.

Permanite 60/Permanite—a lightweight system of waterproofing which does not require an additional sand asphalt carpet—is one of several materials being used on a 350-metre long, six-lane highway bridge in Peoria, Illinois.

The trials have been ordered by the Illinois Department of Transportation which is striving to improve the waterproofing on its bridges, many of which have failed after a comparatively short period of life. This has been due to deicing salts getting into the concrete fabric of the bridge causing failure.

First results of the trials are expected in about three months.

Economical electric heating

SWEDEX (Distributors), of Maidenhead, is handling the distribution in the U.K. of the "Econowarm" electric heating panels manufactured by Jirum AB, Landskrona, Sweden. The range of panels includes convectors and skirting strips as well as closed radiator panels.

Each panel is fitted with its own room thermostat system, which employs a British-made Otter M-Type bimetal thermostat with accelerating and compensating resistors. Compensation is controlled by a thermostat which responds to very small changes in room temperature. The system will thus maintain room temperatures to within ±1°C. The cycle time of the thermostat is about five minutes under average heat load conditions giving a very steady panel surface temperature and extremely economical use of electricity.

The closed panels have a heat shield between the heating elements and the front cover which transfers the heat generated by the elements and

stocking out and reclaiming system planned for the future.

Engineering design work is in hand and site installation and change over are planned for next summer.

£3½m. jobs for Kyle Stewart

THE DEPARTMENT of the Environment has awarded two contracts to Kyle Stewart. One is for Extension 73 to the British Museum in St. Russell Street.

This contract, valued at £1.6m., is for the erection of a five storey block containing restaurant, exhibition galleries, stores, workshops and plant area and the adaptation and redecoration of an existing building. Work is scheduled to start soon and is expected to last for two years.

The other contract worth £350,000 at the National Physical Laboratory, Teddington, calls for the conversion of an existing wind tunnel. This will be a steel framed building on concrete foundations. Work has begun and will last for 78 weeks.

Amalgamated Investment and Property Co., as agent for U.K. Provident Institution, has placed a £1.5m. contract for the

construction of a part six and part four storey air conditioned office block at 164 Shaftesbury Avenue, 15/27 Earlham Street and 33/43 Mercer Street, London.

Construction will be in reinforced concrete on piled foundations with elevations in faced brickwork with bronze anodised aluminium windows. Work has begun and is due to be completed in 95 weeks.

Wimpey in Nigeria

A SUB-CONTRACT worth £4.4m. for earthworks, roads and drainage for the Lagos International Trade Fair has been awarded to George Wimpey and Co. (Nigeria), by the main contractor for the project, Energoprojekt Engineering and Contracting Company, of Belgrade, Yugoslavia.

The work involves the construction of 30 km. of 6 and 7 metre-wide asphalt roads, together with a storm water drainage scheme.

Design is by Energoprojekt to the requirements of the Federal Ministry of Trade and the work will be supervised by the Federal Ministry of Works. The fair is charge and surface discharge and conveying arrangements to link up with a new coal

Road work in Hastings to start

FIRST stage of the Hastings, Sussex spine road is to be started next month. Mears Construction has won the £698,000 contract from East Sussex County Council.

An 18-month job, the contract calls for a 2 km. length of single carriageway road, located between the southern end of Castleham Road on the Castleham Industrial Estate and a point on the A2100, 500 metres west of its junction with the A21. The contract includes the construction of a bridge over the B2159 at Battle Road.

The road will serve the Castleham Industrial Estate and proposed adjacent housing developments. Future phases will extend the road to the east of Bexhill and to the A21 north of Hastings.

Pressure tests oil pipe joints

EXTERNAL PRESSURE testing equipment for tube joints is available from Salvesen Casing Crews, Eurocentre 1, Wellington Road, Aberdeen AB9 2JX (0224 873797). The equipment is suitable for carrying out tests on joints of various sizes.

It will be used by the company's oilfield equipment testing service.

Called the Gator Mater, the equipment was developed by Worldwide External Testers Inc.,

Houston, Texas. It consists of pneumatic and hydraulic systems which create pressure around the connection to be tested.

The metering unit is suspended from the pressure chamber which is clamped round the joint. About 6 ounces of fluid are pressurised up to 20,000 psi in the chamber, and if there is a leak in the connection, the meter detects the drop in pressure.

It is claimed a leak as small as one drop of water in 15 seconds can be found. The small amount of fluid ensures there is no stored energy and the outside test eliminates the possibility of internal scale sealing a small leak, which might be expensive to correct later. It also avoids damaging internal coating and costly fishing for tools lost in the pipe.

Desalination and heat exchange

GRANTS OF up to £50,000 are to be made by The Weir Group of Glasgow to the Department of Mechanical Engineering of Glasgow University.

They will be used to supplement the grants already provided by the Science Research Council for research in desalination and heat exchange, two related fields of technology.

One grant of £5,000 will be used to set up a Desalination Travel Fund. Its purpose will be to facilitate travel to the countries where desalination plants are located.

A research grant of up to £45,000, to be spread over the three years October 1975 to September 1978, will be used to support Research Fellowships for specific projects associated with important aspects of desalination and heat exchange technology.

The dynamic Group in the building business...

TERRAPIN

Terrapin International Ltd, Bond Ave., Bletchley, Milton Keynes, MK1 1JL. Tel: Milton Keynes (0508) 74971.



Cold-proof garments are light

POLARSHIELD garments use a principle employed in space blankets. The inner side of the material has an aluminium backing applied directly to it. This reflects a great part of the body heat and keeps the wearer warm without being in any way bulky or obstructive.

The material is waterproof, windproof, and has a very high resistance to tearing. All the garment seams are sewn and have a double proofing protection on the inside. The clothing is washable in the normal way and is extremely light.

Following sample testing, an initial production run was made up which has been sold in Aberdeen for use on the oil rigs. Acceptance has been good and there have been no major problems.

Garments are extremely light, flexible at all temperatures and very hard wearing. These points coupled with the fact that repairs, either by sewing over a tear or by sewing in a patch, are easy to make. Polarshield is at Juliet House, Beech Lane, Woodcote, Oxon. Checkendon (0491) 681633.



The air tramp in Trevira high tenacity fabric helps spastic children overcome their fear of falling

Help for the children who walk in fear

You've probably completely forgotten the age at which you started to walk. And the last occasion that you tripped up. But for spastic children those subjects are extremely important, because once they fall over, they find it extremely difficult to regain their feet — and their confidence. Removing this fear of falling would be a big step forward in therapy for spastic children. So Hoechst helped to remove it with the Trevira-based air tramp.

The massive mattress
Basically, the air tramp is a large inflatable mattress. So the children can train and coordinate their ability to walk without worry. And because the air tramp is made in tough coated Trevira high tenacity fabric, it'll keep on training children until they grow up.

It trains athletes too
The same properties that make the air tramp so useful in training handicapped

children, also help sportsmen improve their coordination and physical fitness.

Experts from many fields concentrate on one problem
Products like Trevira high tenacity are the result of experts from many areas of science pooling their knowledge and experience: chemists, textile engineers, application technicians, orthopaedic surgeons. The unified approach that Hoechst uses to solve problems means that progress takes place quickly and that the spin-off from new ideas is thoroughly exploited.

Hoechst in Britain
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FINANCIAL TIMES SURVEY

Monday November 3 1975

COMMERCIAL VEHICLES

The new truck models that have been introduced in the last year have arrived on the market at a time when it was least able to absorb them. Sales have fallen off and recovery appears still to be some time away.

Major problems all round

By Terry Dodsworth

THE LAST 12 months have not proved a strikingly impressive example of the forecasters' art in the motor industry. While the world has slipped into recession, new products, representing major investments, have rolled off the truck production lines across Europe, dropping into the market at the one moment when it was least able to absorb them. With productive capacity swinging sharply into surplus, extensive price cutting and discounts are now trimming the margins of the major producers. Recovery, according to the manufacturers, is still some time away.

The activity in new models has been particularly pronounced in Britain, for reasons that go back to the reluctance of British Governments in the 1980s to step up the weight limits on heavy trucks. This gave the Continental manufacturers a big technological lead, and which the British companies, because of their traditional concentration on third world markets rather than Europe, did very little to combat. The

eventual decision to put up U.K. weight limits to 32 tons thus brought a flood of foreign manufacturers into Britain, and the new ranges of vehicles now coming on stream represent the response to this invasion.

In effect, what these models mean is that the U.S.-controlled multinationals have at last decided to enter the European heavy goods market in earnest. Ford, Bedford and Chrysler all tend to concentrate their truck production in Britain, where they have applied their American techniques to make a relatively cheap range of vehicles in a utility world best suited, it used to be thought, to the U.K. market and the Third World. Until recently in exporting terms the investment in the lines across Europe, dropping into the market at the one moment when it was least able to absorb them. With productive capacity swinging sharply into surplus, extensive price cutting and discounts are now trimming the margins of the major producers. Recovery, according to the manufacturers, is still some time away.

Reserves

Entry into the EEC has changed all that, and a shift of thinking has been evident for some time at Bedford and Ford in particular. Both companies have been building up distribution systems in Europe on the back of their small and medium range vehicles, and both have proved that the price competitiveness of British-produced vehicles can win sales in the EEC. Ford's Transit, for example, has now established

itself in all the major markets, and Ford claims that out of a total European market of 442,000 in this range of light and medium weight vans, the Transit has an 18.8 per cent share.

The addition of new heavy trucks to the ranges offered by Ford, Bedford and Seddon Atkinson (taken over a year ago by International Harvester), gives them access to a sector of the market which, despite the present recession, should in the long term prove to have the most growth. No major manufacturer can readily afford to ignore the heavy goods sector—Fiat has also emerged this year with a new range, the 170/190—and Ford and Bedford have timed their entry at a point when they already have the well-established distribution systems necessary to compete in this field.

Like the American-owned British companies, British Leyland has also begun to bring Europe within its sights. Part of Lord Ryder's plans for the future of the company were that the truck and bus interests should aim to increase their penetration of the Western European market from their present 1 per cent to 5 per cent over the next eight years.

In order to help BL will get £230m. for investment in new plant, engineering and test tracks in the truck and bus section. The implication of such policy developments is that the future lies with the big battalions. Indeed, there has been a classic example this year of the thinking of the truck industry in the

NEW REGISTRATIONS - 9 MONTHS STATED					
Manufacturer	Car Derived Vans and Pickups Jan.-Sept.		Other Goods Vehicles up to 3½ tons Jan.-Sept.		All Other Goods Vehicles Jan.-Sept.
	1975	1974	1975	1974	1975
BRITISH					
Bedford	11,243	11,006	11,347	14,512	8,729
British Leyland	23,168	22,601	15,885	15,114	10,745
Chrysler	—	—	7,485	8,979	4,301
Ford	12,851	16,651	27,172	28,434	11,107
EHF	—	—	—	—	1,208
Foden	—	—	—	—	740
Seddon Atkinson	14	25	46	47	573
Others	—	—	—	—	2,063
Total British	49,276	50,283	61,945	67,077	39,365
IMPORTED (Major marques)					
DAF (Holland)	22	387	—	—	414
Chrysler (France)	4,367	8,794	—	—	—
MAN (FDR)	—	—	—	—	223
Magirus Deutz (FDR)	—	—	—	—	94
Mercedes-Benz (FDR)	—	—	726	516	697
Volkswagen (FDR)	—	—	4,193	5,310	—
Fiat (Italy)	—	—	1,351	1,778	284
Mazda (Japan)	—	—	1,082	744	—
Toyota (Japan)	—	—	2,187	2,474	—
Scania (Sweden)	—	—	—	—	581
Volvo (Sweden)	—	—	—	—	1,710
Total Imported	5,976	9,276	9,760	11,251	4,129
GRAND TOTAL	55,252	59,559	71,705	78,328	43,494

Source: Society of Motor Manufacturers and Traders.

completion of the merger between Fiat and Magirus Deutz based on Fiat and OM in Italy, in Germany which brings together a production organisation straddling the three major Continental countries. The merger, concluded through Fiat, which is 80 per cent owned by Fiat, and 20 per cent by KHD, means that Fiat has built up a total truck capacity of about 110,000 units a year, based on Fiat and OM in Italy, in Germany which brings together a production organisation straddling the three major Continental countries. The merger, concluded through Fiat, which is 80 per cent owned by Fiat, and 20 per cent by KHD, means that Fiat has built up a total truck capacity

strong in the past, and Unic will export to its own spheres of influence.

But what does this mean for the smaller truck producers? This year again there have been two examples of the problems facing the specialised concerns, when both Fodens and DAF, the Dutch manufacturer, ran into trouble and had to be rescued.

The problem for small producers, particularly at times of acute competition as at present, is to maintain margins in the market place against large manufacturers who can trim prices because of greater productive efficiency. These difficulties are made more acute when manufacturers, like Fodens and DAF, are based in wide-open markets where there is considerable international opposition: unlike the successful Swedish producers, Volvo and Scania, they do not have the reassurance of a strong presence in their home market to fall back on.

One way of combating size is the "proprietary" method of production, whereby the assembler buys most of the major components from outside suppliers, and simply aims to get the optimum size of assembly plant while producing the quality in the final product will be the excellence of the assembly method. There is considerable debate about the merits of this system, which is employed successfully by Volvo on its car side.

Many British truck companies have used it in the past quite happily, and despite the rash of mergers over the last decade, major component businesses—engine and transmission manufacturers in particular—continue to thrive.

Fodens, in fact, was in the process of adding a "proprietary" type assembly capacity to its plant in Sandbach when it ran into financial trouble. Over the years, Fodens' strength has been based on a contrary philosophy—that it should make as many of the major components in its vehicles as possible, thus ensuring a high-quality, high-premium truck. But it came to believe that the only way to grow from its very limited size, and thus protect itself from larger predators, was to graft on a production unit which was flexible enough to produce a straightforward assembly line vehicle, or one containing a high degree of special, customised parts.

Fodens had the mischance to bring in its new plant—one of the most sophisticated in Europe—when the market had gone flat, and a quick recovery for the company undoubtedly depends on an improvement in the home market. One of the lifelines for the company this past year has been in the Middle East, where Fodens has had a long history of exporting to the Gulf States, and where its heavy, premium trucks are ideal for the conditions; but the debate about the merits of this system, which is employed successfully by Volvo on its car side, has hit the Government, has hit

CONTINUED ON NEXT PAGE

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COMMERCIAL VEHICLES II

Bus operations at the crossroads

THE LAST 18 months have been dismal ones for the bus industry on every side. Operators have watched costs swell by undreamt of amounts while Government pressure on spending is already clear. Under the complex allocations/grants system which operates on revenue subsidies (capital expenditure is treated differently, while there are also fuel duty rebates), central Government has laid down guidelines for fares nonetheless and suffered from yet more service cuts with the threat of worse to follow on both counts; and vehicle manufacturers have failed to meet the demand for new buses — and spare parts for existing ones — in a way which has compounded the difficulties being felt all round.

For the operators, the next few days could well be crucial ones. This month should see a conclusion to the negotiations between local authorities and central Government over the level of revenue subsidies to bus operators in the next financial year. And on the outcome of these depends the short-term future, at any rate, of bus services in many parts of the country.

That the central Government far this year—have already been raised to what many authorities adhere to the guidelines, and there have been signs that some will not—basically hit the main concentrations, and London in particular, with rural areas and the smaller towns better off than this year.

In the past, the contributions have received very much the larger part of the allocation. London's share this year was over 60 per cent, with the metropolitan counties served by the six passenger transport executives receiving around a third of the total. The so-called "shire" counties, housing more than 60 per cent of the population of England and Wales and served largely by subsidiaries of the State-owned National Bus Company, received only 7 per cent.

National Bus itself, which has a statutory duty to break even (but reported a surprise £12.3m. loss in 1974 that, along with increased capital expenditure, consumed its entire £20m. cash reserves), received just 5 per cent, leaving it to raise 90 to 95 per cent of its revenue from passengers compared with around 80 per cent for London Transport and the PTEs, under 75 per cent for British Rail—and only 50 per cent for many bus operators elsewhere in Western Europe. It is small wonder that London fares are so much lower than those of most National Bus subsidiaries, and services so much better (even if they may compare unfavourably with those of some of Western Europe's other major cities).

For the cutbacks will—if local authorities adhere to the guidelines, and there have been signs that some will not—basically hit the main concentrations, and London in particular, with rural areas and the smaller towns better off than this year.

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In this context it is unfortunate, from the British importing position, that Ford has chosen to assemble its new Transcontinental at Amsterdam. On the other hand, entry into the EEC means that in the longer term there must be much more inter-trading between European partners, and more of the home market can be expected to go to imports; the significance of the last 12 months for the British industry is that it now has products with which to fight back in the importers' home markets as well.

Allocation
Next year, the tables are turned. The Government has made it clear that London and the metropolitan counties are to receive a great deal less of the allocation than in the current year, with the "shire" counties receiving more in cash terms than at present. (National Bus needs an additional £20m. at least.) Nonetheless, for both the National Bus routes and those in the countryside, ratepayers are likely to find themselves forced to pay significantly more towards bus services than they have been if further service cuts are not to be made. In London, the Greater London Council has been issuing dire

warnings about the cost of maintaining services at their present level, while Dr. John Gilbert, the Minister for Transport, has spelt out the message to counties in unequivocal tones. "If a county has decided not to support particular loss-making services, it must be assumed that these will be cut," he said in July when the counties submitted their initial Transport Policies and Programmes indicating the level of support they were prepared to give NBC services.

So, for passengers and ratepayers, the prognosis is bad. Making it worse are the problems of bus manufacturers—and this largely means British Leyland and its joint National Bus Company offshoot, Leyland National. For passengers, most noticeably in London but elsewhere too, are not only being faced with reduced services as part of a bid to cut losses; they are also being hit by the sheer unavailability of buses to allow schedules to be maintained.

On any average working day, London Transport in particular is short of 400 buses out of a total fleet of 5,500. With a delivery delay of nine months for new vehicles from British Leyland, and up to 15 months for parts for existing vehicles in need of repair, LT has been driven to hiring coaches from other operators and putting 1,800 old buses considered to have reached the end of their economic life back into service in a bid to meet the gap.

The causes of the delay in part go back to the three-day week of two years ago, which severely hampered production, creating a backlog of orders whose effects are still very much being felt. Strikes and a lack of investment on the bus side of Leyland's business have not helped the situation (and it is noteworthy that the greatest share of Leyland's £120m. investment programme in the current financial year is to be concentrated on the truck and bus division).

Nonetheless, the problem, particularly acute as far as double-decker vehicles, where BL has a virtual monopoly, are concerned, cannot be laid solely at Leyland's door. Many parts are bought in from outside and there is, for example, a worldwide shortage of pistons. Inconsistent ordering patterns

by the operators, both in terms of the actual placing of orders and the specifications laid down for vehicles, have not helped. A major factor has been the turnaround in union attitudes to take more vehicles), while the January to August period saw 11,203 U.K. buses sold abroad to bring £11.1m. in foreign exchange earnings to this country (with a very significant proportion—some 1,900 vehicles worth £2.37m.—accounted for by orders from Iran). U.K. production this year has also improved: January-August saw 22,015 vehicles (13,850 of them for export) come off the production lines against 20,738 (13,475 of them destined to go abroad) a year before.

Meanwhile, the overall bus scene remains an extremely lively one. Passengers may face a higher fare and, possibly, still fewer services, but there is some consolation to be found in the various means being looked at to improve their lot. Bus lanes in urban areas, speed-ing-up journey times—and also possibly reducing operators' costs, since a faster journey can mean that fewer vehicles and men (an important factor when labour accounts for 70 per cent of overall costs) are needed to operate a particular route—are one obvious example. There are the various dial-a-bus experiments, which seek to give the bus something of the flexibility of the taxi, the Superbus scheme in Stevenage New Town, with frequent flat-fare services tailored to the special needs of the area, the Runcorn busway scheme, the bold planning for bus operations in the new city of Milton Keynes, and a host of others.

Postbus services have been introduced in rural areas, and one group of villages in East Anglia without any public transport is being made the recipient of its own mini bus to be operated by the inhabitants themselves but serviced by National Bus and part paid for to start with by Norfolk County Council, which has strong hopes that viability will be achieved relatively soon.

On the traction side, experiments with electric buses continue, perhaps leading up to the day when the pollution, both aural and physical, of the diesel-powered city bus is a thing of the past—although results so far

indicate a long wait ahead. Thus, suggestions that bus operation is a dying industry can easily be refuted. NBC, for example, is actively involved in 18 new towns, putting a great deal of thought to the provision of public transport facilities where there were few or none before. And, with private motoring becoming more and more expensive and socially less desirable, buses could even have a growing role to play, at least in the long term, even though they are no substitute for the private car in many ways.

Yet, when all this is said, there is still a great deal which needs to be done. In many areas, personal mobility for those without cars is less than it was a century ago thanks to the cutbacks in public transport. In others, catching a bus is a hazardous business, with no information on bus stops and the buses themselves. Bus-rail links in many towns are practically non-existent.

There is a double need here. First, given that most of the significant economies in operation that can be achieved already have been, short of slashing services, and that fares may be near the point where they are self-defeating, a good deal more outside cash is required. In the present economic climate, this is clearly not on, but a system of costing which took account of the many indirect benefits of increased public transport use might make it more feasible for the future.

Second, it needs to be made a lot easier for people to use buses. This does not necessarily mean increased service frequencies, but it does mean more reliable ones. And it means giving a maximum of on-the-spot information to would-be passengers and a great deal more co-ordination of the type often lacking even between overlapping subsidiaries of National Bus operating in adjoining areas. Talking to those concerned with the running of bus services, the uniform characteristic of the men at the top is enthusiasm for what they are doing. But all too often that enthusiasm seems to be sadly lacking at the point where the passenger actually boards the bus.

David Walker

Earnings
Last year, 1,404 buses, worth £1.1m., were imported into this country, half of them coming from West Germany. The first eight months of this year saw imports running at a slightly higher rate—906 vehicles worth £751,000 (with 419, worth £294,000, coming from West Germany, and 433, worth

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Problems

CONTINUED FROM PREVIOUS PAGE

Ford's hard; now that it is set on an even financial keel again there are signs that customers are coming back.

Opinions are acutely divided when the upturn in the British and European market will come. Continental Europe, however, where the heavy goods sector has slipped back by at least 20 per cent, this year, is expected to begin moving up earlier than the U.K.—Fiat, for example, believes that there should be an improvement as early as the second quarter of next year. Britain may have to wait until 1977, according to the more pessimistic of the forecasts.

So far this year, the U.K. picture has been extremely patchy. Looking at the whole of the 31 ton and over market for example, sales, at 43,500, over the first nine months of this year have only been down by about 4.5 per cent; but within this total the heavy goods and building and construction work vehicles have lost a very large number of sales, while the smaller distribution vehicles have held their own relatively steady. Light vans, by contrast, have slipped heavily—a 12 per cent drop to 71,700 registrations—which is probably partly due to their escalating prices.

Amid all this gloom, the one bright feature for British manufacturers this year is the way in which they have pushed back the importers' challenge. Although newcomers like MAN and Magirus Deutz have managed to establish a precarious foothold, the big importers—Volvo, Scania, Mercedes, Daf—

have all suffered setbacks; only Fiat has managed to increase its sales in the heavy vehicle range, and overall the importers have slipped back from sales of 5,000 last year to 4,100 this.

In this context it is unfortunate, from the British importing position, that Ford has chosen to assemble its new Transcontinental at Amsterdam. On the other hand, entry into the EEC means that in the longer term there must be much more inter-trading between European partners, and more of the home market can be expected to go to imports; the significance of the last 12 months for the British industry is that it now has products with which to fight back in the importers' home markets as well.

Terry Dodsworth

Heavy market in decline

BOOM TIMES have turned very swiftly to depression in the heavy truck market this year. According to some estimates, sales of trucks in the 30 ton and over gross vehicle weight category have suffered a 20 per cent decline across Europe on the levels of last year. The prospect, at least in the U.K., is equally gloomy, for only a radical improvement in economic conditions can pull back the business to the levels for which investment has been ploughed in over the last five years.

This investment has been very considerable indeed, bringing several competitors into the business for the first time. These include Ford, which is the biggest commercial vehicle producer in Europe, if car-derived vans are taken into the equation. Bedford, the U.K. subsidiary of General Motors, and Seddon Atkinson, now a subsidiary of yet another American multinational, International Harvester.

Alongside these are the established producers, Mercedes Benz, the biggest manufacturer of trucks over 34 tons in Europe, Fiat, which has put together a Europe-wide truck manufacturing concern, the Scandinavian companies Volvo and Scania which have chosen to concentrate on heavy trucks, and British Leyland. Among these Fiat has also just brought out a new range of vehicles.

The heavy investment in this sector is related to the long-term trends of the haulage industry, which show a gradual replacement of smaller and lighter vehicles by heavier trucks capable of carrying more. In effect, although the total load carried on the roads has increased considerably over the last decade, the number of trucks has remained relatively static, while their weight has increased. As trade within Europe becomes more cosmopolitan, and trading links with the Middle East and Africa extend along lorry routes (the road to Iran, while still hazardous, now takes enormous amounts of traffic), the heavy, containerised shipment is coming more and more into its own. The present hiccup in this development has been caused partly by the stagnation of this kind of international business, and partly by the costs of run-

ning heavy fleets. When trading conditions are difficult, and margins low as they are at present (one estimate of British hauliers' margins puts profits at about 4 per cent, on capital at least), a rate which does not cover replacement costs), the temptation is to spend money on smaller vehicles. There is more certainty, at least, in filling these, and the cost is relatively lower, given the £12,000 to £15,000 price for heavy 30 tons and over trucks.

For instance, Ford's new truck, the Transcontinental, is a vehicle which brings together many European talents. For its first venture into this highly specialised business, Ford decided to use a "proprietary" approach—that is, buying in most of the major components and concentrating its own efforts on assembly. Made by Dutch workers in Amsterdam, the trucks in fact utilise about 60 per cent British parts, including engines by Cummins (like Ford, another U.S.-controlled operation), and cab designed by Berliet, the French truck concern owned by Renault.

This kind of proprietary approach has been a feature of the British industry for many years, though less so on the Continent, where companies like Mercedes and Fiat have traditionally had a high degree of vertical integration. The result of this policy in Ford's case is a vehicle which has none of the national or corporate peculiarities of style which used to characterise truck design; indeed, as far as new cabs in of general are concerned, there is a growing convergence of style—paraphrasing one of the new Fiat trucks with a Transcontinental

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partly because of the need, for length reasons, to place the cab directly over the engine, and partly because engineers are finding common answers to the tough safety and environmental regulations.

The decline of European parochialism in the heavy truck market is analogous to that experienced by the car industry. In Britain it has become particularly noticeable over the last five years or so, when the Scandinavian producers have managed to get a major foothold in the U.K.—coming in at a time when British heavy trucks were scarce to be followed, though less successfully as yet, by DAF, Mercedes and Fiat.

Intense
There was a time when loyalties to a particular marque in the haulage business were intense—indeed, it still exists up to a point, accounting for the continued existence of a small diesel engine company, like Gardner. But these feelings have been hit extremely hard by the economic realities of the trans-Continental haulage business. This requires an international system of distribution, with parts and service facilities available at a few hours notice. Even more than in car distribution this is essential: a cargo of refrigerated or perishable goods, for example, simply cannot be held up indefinitely by the absence of a spare part. Thus the economic pressure on trucks with a Transcontinental

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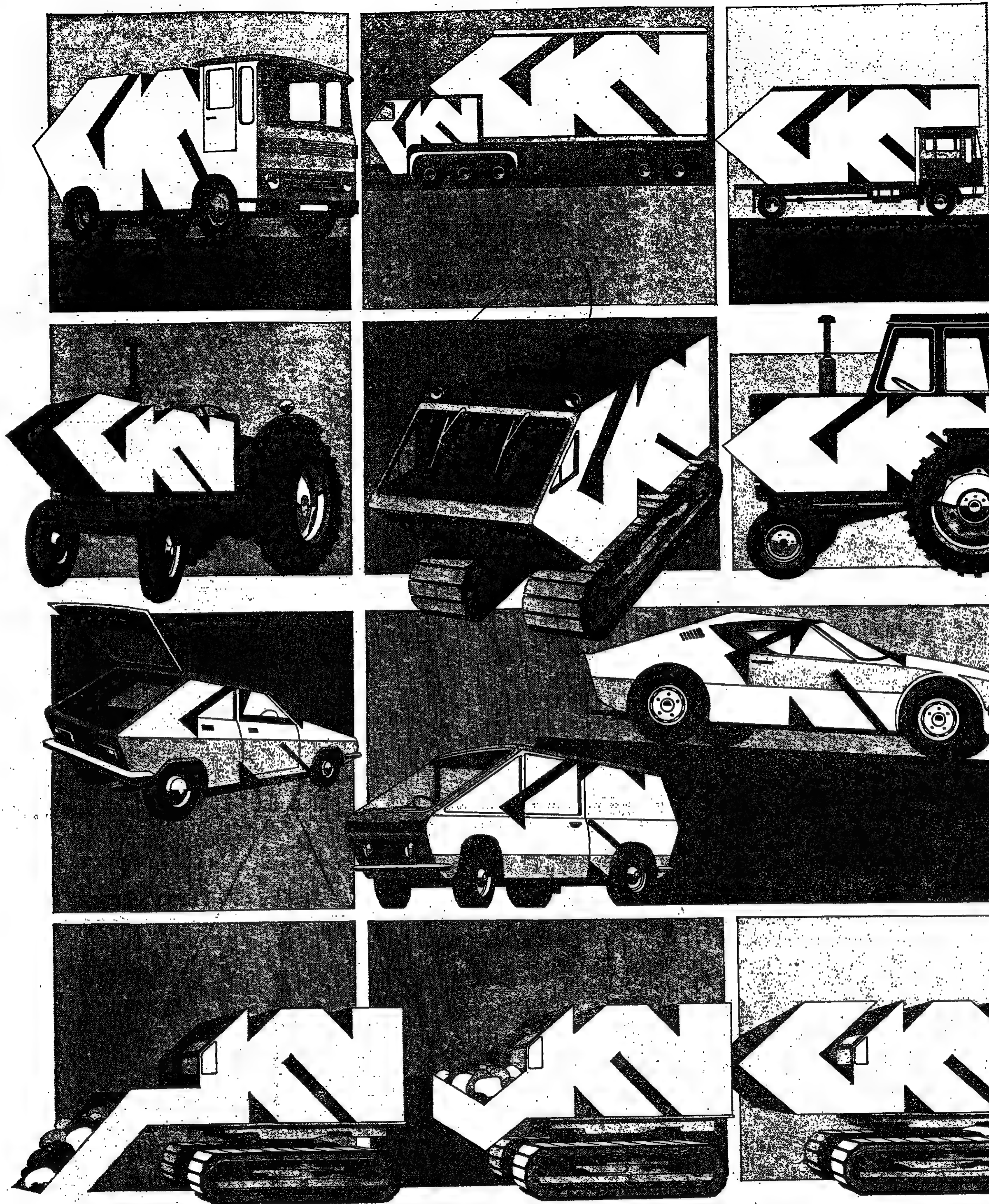
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List of main products

Aluminium extrusions
Aluminium ingots
Anti-lock braking ("Ferguson Formula")
Axle shafts
Axles, driving - cars, light trucks, dumpers
Axles, steering/driving
Axles, hub reduction
Ball pins
Bearing metal ingots
Bearings, ball, roller and taper roller
Bearings, sintered metal, oil retaining
Bearings, thin wall (for engine crankshaft and connecting rods)
Body panels
Bolts, all International standards
Bolts, self-locking
Bolts, standard and special
Bronze, chill cast stick
Bronze, continuous cast bar
Bronze wrought alloys
Bumpers and over-riders
Bushes, non-ferrous
Bushes, oil-retaining
Bushes, dry
Cabs, trucks and tractors
Castings, malleable iron
Castings, light alloy
Chassis frames
Clutches, diaphragm spring, "Belleville" disc and coil spring
Component parts, precision sintered
Control cables
Couplings, universal ("Hooks" type)
Couplings, constant velocity
Couplings, plunging
Crankshaft forgings
Crankshafts, finish machined
Diagnostic equipment, engine and vehicle performance
Differential units
Differentials, limited slip ("Power Lok")
Drive shafts (to road wheels)
Electrical laminations
Extruders, aluminium
Extrusions (cold extruded in steel)
Extrusions, impact
Fabrications
Fasteners (all types)
Flexible Drives
Forgings - drop, press and upset
Forgings, impact machined
Forgings, powder metal
Forgings, precision
Four wheel drive ("Ferguson Formula")
Garages, equipment
Hinges, door
Hoses
Impact extrusions
Joints, constant velocity
Joints, plunging
Joints, universal ("Hooks" type)
Lock nuts
Locks, door
Locks, fuel caps
Locks, ignition
Locks, steering
Maintenance workshop equipment
Nuts, all International standards
Nuts, standard
Nuts, special
Overdrive units
Overdrive units
"Range Change" (double gear ratio range)
Plastic mouldings (radiators, grilles, body interior units, etc.)
Plastic panels, glass fibre reinforced
Powder metallurgy
Power take-off shafts
Power take-off shafts, agricultural
Pressings, from small cover plates to truck and bus side frames
Propeller shafts
Push rods, engine
Range Change overdrive
Road wheels
Rocker arms, engine (pressed steel)
Screws, all International standards
Screws, machine, standard
Screws, machine, special
Screws, self-piercing and tapping
Screws, self-tapping
Screws, wood
Sintered metal components
Spring steel, strip and wire
Starter rings
Steel bars, black and bright drawn
Steel bars, free cutting
Steel strip, hot and cold rolled
Steel - special rolled sections
Steel wire, cold forging quality
Strainers, metal and nylon
Transmission components
Transmission system, "Ferguson Formula"
Washers, bearing thrust
Washers, standard
Washers, special
Wheels, road, light alloy
Wheels, road (for buses, trucks, tractors, dumpers, earthmovers)
White metal ingots
Window catches
Wire
Woodscrews, slotted head
Woodscrews, recess head ("Fozdriv")

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COMMERCIAL VEHICLES IV

Revived interest in battery power

THE RAPID and traumatic increase in fuel oil prices towards the end of 1973 inevitably led to a renewed search for alternative methods of motive power and to a re-examination of forms, principally electricity, which had been previously rejected on cost grounds. This year has seen an enormous amount of new activity in the electric vehicle field both in this country and in Europe—particularly Germany—Japan and the U.S.

The concept of battery vehicles is far from new. The first practical electric carriage was made almost 140 years ago, only a few years after Faraday's discovery of electromagnetic induction. The first commercial passenger-carrying battery vehicle in the world was introduced by the Paris Omnibus Company in 1881, and less than a century later, electrically powered bus fleets were appearing in Berlin, Paris, New York and London. The world's first taxi cabs were electric while it took some time to know that the world's first land speed record, in 1898, was established by a battery powered vehicle with a breathtaking velocity of 39 m.p.h. Queen Victoria is even reported to have looked favourably upon this version of the horseless carriage, which, it was reported, was "adopted by the aristocracy of London, Paris and New York."

The invention of the internal combustion engine, with its far superior performance and more economical running costs, drove the battery powered vehicle as a form of open road transport into the science museum. There are still few signs that it is going to make any large scale break out. This is not to say that there is no scope for the electric vehicle. Indeed, there are, at this moment, in the region of 45,000 battery powered electric vehicles on the roads of Britain, most of them milk floats, while the pollution free qualities of the electric engine have made it a must for internal factory use, where the fork lift truck is in fact helped by the weight of the lead acid battery.

Pace

Oil crisis notwithstanding, however, the fact remains that battery vehicles are still nowhere near competing with petrol and diesel cars, trucks and buses. Perhaps the most surprising fact in a world which has become blasé about the pace of scientific innovation is that there has been only minimal advance in battery traction over the past hundred years or so. Now, as then, the lead acid battery remains the most viable form of motive power, and although there are widespread experiments going on with high temperature batteries, principally sodium sulphur, and with other alternatives such as metal/air, the battery industry

has still to make the significant breakthrough.

To fully understand the superiority of the internal combustion engine it is necessary to understand the shortcomings of the battery power, which is, to all intents and purposes, lead/acid power. The prevailing difficulties relate to weight, performance, range and time necessary to recharge. For example, the batteries used in the electric bus system now operating in Munchengladbach and Düsseldorf, which are lead/acid with advanced design features relating to cooling and automatic refilling, weigh 6 tons for each single decker. In terms of performance, the relatively high speed and acceleration necessary for road use can only be bought at the expense of a much higher rate of battery rundown and the necessity of more frequent recharging and greater "downtime." Again, range is highly limited, with reported figures of 100 miles for certain vehicles obtained only as a result of single-speed driving with no stopping and starting. In town driving, range is cut down sharply. When it comes to recharging, a full recharge can take up to eight hours, which represents a further sharp restriction on flexibility of use.

These all add up to the fact that electric vehicles can only be considered as a viable alternative under fairly restricted circumstances, where range and performance are predetermined, where a long period is

available for recharging and where environmental considerations are paramount. Since and enable a bus to run a full operation this has been felt to be one of the least suitable areas for electric conversion, although the Electricity Council is currently testing a number of Enfield 8000 electric cars.

Buses on the other hand, where routes are precisely known in advance have been considered much more suitable and a large number of experiments have been undertaken in the last couple of years. The problem remains however that although routes may be known, that still does not solve the range problem. Electric buses cannot simply be turned round at the terminus.

One solution to this problem is to replace "used" batteries with new ones and then recharge them away from the vehicle, although here the size and weight of batteries presents handling problems. This has been the method adopted by the GES consortium in Germany which has developed

sophisticated automatic charging stations which can replace a battery in a matter of minutes and demanding daily service—in some cases working for more than 19 hours and covering well over 200 miles. Nevertheless, these buses, which are perhaps the most advanced developed to date, are still 80 per cent. more expensive than their diesel counterparts in running costs, once the expense of the driver has been taken away.

Costs

The issue of costs thus remains all-important. Studies published last year by the Transport and Road Research Laboratory point out that even a fourfold increase in fuel oil costs would not in itself be sufficient to gain the widespread use of electric vehicles. Lucas and Chloride have both started running experimental electric bus services in Manchester this year, although they have each been beset with problems, and since each bus has

fixed batteries, the question of lengthy downtime remains.

When it comes to commercial vehicles, long distance haulage is out of the question due to range limitations and the positively daunting size of the battery needed to power a 32 tonne lorry. Short distance urban carriage is considered more viable and there is a good deal of work going on at the moment in the one-ton payload range by companies such as Lucas in the U.K. and Volkswagen in Germany.

Another alternative which has been looked at, for example by Volkswagen, is the "hybrid" vehicle which is petrol/battery powered. However, the fact that Volkswagen's hybrid van is on the way to the Guggenheim Museum in New York is perhaps a fitting comment on its commercial viability. For the future, electric vehicles only appear to be a viable proposition where environmental considerations outweigh commercial disadvantages, although a scientific breakthrough could tip the balance.

Peter Foster



The Lucas electric bus in operation in Manchester.

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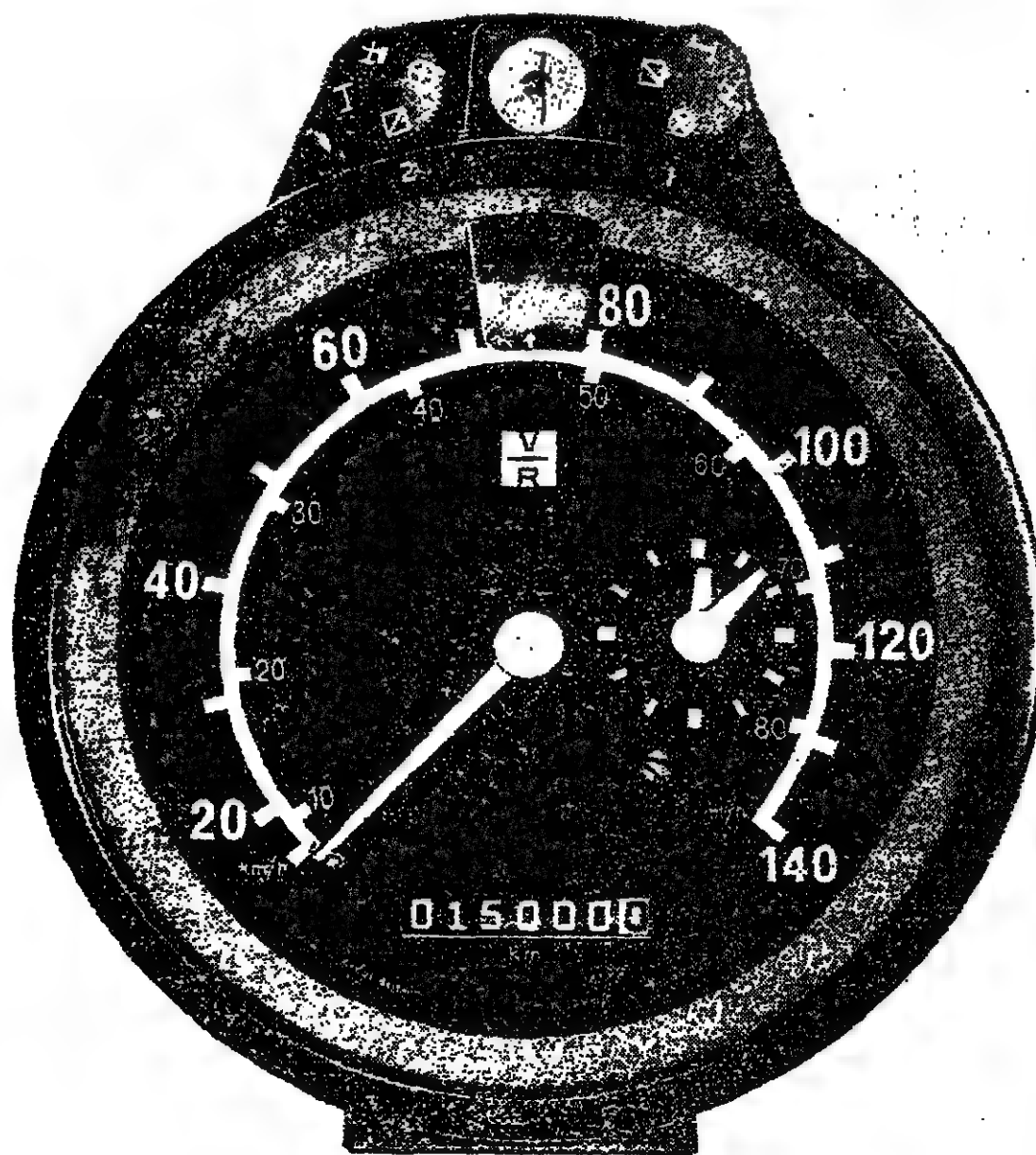
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A specialised vehicle from Scammell.

A steady market for specialists

ONE OF the most intriguing sectors of the commercial motors industry is the manufacture of specialised heavy vehicles—the haulage machines that transport tanks and massive loads across deserts and rough terrain.

Scammell, the Watford-based company which has managed to maintain its identity within the British Leyland empire, can claim 50 years' experience in making "one-off" vehicles. Though the company has a range of basic vehicle types, any one of these can be redesigned to meet the needs of an individual customer. The company's design team can call upon the components and resources to equip a vehicle to serve virtually any transportation demand.

Scammell says that nearly the whole of its £4m. a year turnover is for export, principally to the Middle East, Africa, and the Third World countries where heavy vehicles are needed for development programmes. With such a market, competition is truly international.

Downturn

While the downturn in the world economy has certainly slowed down demand, the range of uses to which specialised vehicles can be put is so wide that manufacturers have not been unduly hit. Vehicles are usually supplied at a negotiated price and in times of economic uncertainty such negotiations may become more protracted.

Scammell, as one of the best known names in the world market provides a good example of the sort of qualities required for specialist vehicles. The "Contractor" heavy-duty vehicle used with a Crane Fruehauf semi-trailer can haul military tanks, weighing up to 60 tons, at speeds of up to 46 miles an hour, over a 300-mile range. Scammell reports that the model has been supplied to governments throughout the world and operates reliably in conditions ranging from Arctic to sub-tropical.

A modern transporter must allow the fast deployment of

armour without wear and tear on the tank or undue stress upon the crew. Equipment must also be provided to enable captured or broken-down vehicles to be moved quickly and easily to safety.

To demonstrate the flexibility of its Contractor, Scammell Broughton, which can provide winch for the fast movement over differing terrain of armour such as the Chieftain, Russian T55, T62, and French AMX 30 tanks. The vehicle has a turbo-charged 335 bhp diesel engine which enables it to operate efficiently at altitudes of up to 12,000 feet without loss of power. An integral engine brake is a valuable help in times of emergency. The gearbox has 10 normal and five deep reduction gears; all the ratios can be changed to suit the transporter to hilly or flat terrain.

So that the vehicle can cope with tropical operations, its engine is cooled to handle temperatures of up to 125 degrees F (52 degrees C). To aid the driver, the cab has a sun canopy and can be fitted with air-conditioning equipment.

Crucial to the operation of such specialist vehicles is careful attention to a design which will allow maximum stability and evenly distributed weight even over the roughest landscape.

The Contractor has a specially designed winch for military operations. Between 107 and 122 metres of 25 mm. rope can be carried on the vertically mounted drum, which has a particularly large diameter to reduce the bending stress on the rope. For tank recovery, special safety features have been built-in—a winch brake cut-out, for example, to prevent any run-back should the engine stall.

Top quality winching equipment is also a feature of another Scammell model, the "Super Contractor" wrecker/recovery vehicle. This basic chassis, first introduced in 1960, is designed to cope with transporting extra heavy loads across rugged terrain, and desert areas.

The wrecker/recovery vehicle, which as the name suggests can be used for recovering heavy plant or machinery from inaccessible places, can tow vehicles to be moved quickly loads of around 100 tons.

The special recovery equipment, designed by Reynolds of its Contractor, Scammell Broughton, includes a 20 ton winch and a ten ton crane which gives the vehicle an additional function as a mobile crane for use at base workshops. The winch itself has a bare drum line pull capacity of 25 tons, and a continuous line pull of 20 tons along the entire 150 metre rope length. Jacks come into force to stabilise the vehicle while the crane is in operation and a massive spade holds the Contractor during winching.

Rough

The sturdiness of such specialist machinery can be appreciated when it is realised that the chassis frame of the base Contractor has boxed side-members of half inch steel plate.

Scammell says that several European governments between them have ordered "many hundred" chassis and draws attention to the vehicle's adaptability to rough ground. For maximum articulation the Contractor is suspended on a three-point mounting system, comprising pivots for front axle and each balance beam of the rear tandem bogie. Continuous drive to the six driven wheels is ensured and the 275 bhp Rolls-Royce engine is prevented from overspeeding by a special electronic device built into the gearbox.

Very high specifications and quality engineering are obviously necessary attributes for success in the manufacture of special purpose heavy vehicles. Within British Leyland, Scammell, with some 950 employees, provides a good example of a company trading profitably and pressing ahead to record valuable achievements in export markets.

Arthur Smith

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Good export record

UCK EXPORTS have played a highly significant and frequently unrecognised role in the development of the British motor industry. Largely because in war time priority was placed on commercial vehicle development over cars, the U.K. emerged in the late 1940s with a much stronger truck than car industry. Later, the powerful commercial vehicle industry was to prove the primary force behind the present pattern of companies, for Leyland Motors, the most successful of the truck makers, became the chosen vehicle for the rationalisation of the non-American-owned car of the industry.

Leyland, in its heyday in the early 1960s under Lord Stokes, was a spectacularly successful exporter, winning big contracts all over the world, from its renowned bus deal in Cuba to the

lorry assembly business in Israel which has subsequently been such a source of aggravation to British Leyland since it caused the company to be placed on the Arab boycott. Mercedes, Germany's most consistently effective motor concern of the last decade, is another example of a company which has risen on the back of truck sales, including a highly successful export business.

One reason for the seemingly untroubled growth of companies like these, and their apparently much more stable record than comparable car manufacturers, is the basic nature of the business. As a product, lorries are much closer to the capital goods industry than cars, which are effectively treated as consumer durables with all that implies in terms of price competition and fashion influences.

Prices are not such a key element in the truck industry: what matters, in a product worth between £5,000 and £15,000, is not the odd £100, but the quality of service and sales back-up, and personal relationships between the salesman and customer. At the same time, customers are more prepared to accept the need for the manufacturer to make a reasonable margin on the sale, unlike the average motorist.

Of all the large European commercial vehicle manufacturing nations, Britain has for many years been the primary producer. In 1973, for example, the U.K. produced 417,000 vehicles to France's 394,000, Germany's 299,000, and Italy's 135,000. This weight of production is partly due to the

emphasis placed on road, as opposed to rail, transportation for freight, a far higher proportion of goods being carried by truck in the U.K. than in Germany, for example, because of the deliberate Government efforts on the Continent to keep freight on the railways.

At the same time the U.K. industry has been highly export orientated, with strong links throughout the Commonwealth and the third world. Part of the reason for this was the swifter development of the commercial vehicle industry in Britain, which meant that the American-controlled concerns tended to concentrate their CV production in the U.K. rather than Germany, where the main thrust of their car investment went.

Hence General Motors has built up the Bedford business in the U.K., while Opel has no



The British Leyland Super Constructor 50-ton-capacity oilfield exploration vehicle in service with a Finnish firm.

producer in Europe of trucks has been its flexible approach over 31 tons GVW. The Ryder report on BL set an ambitious target for the truck and bus division, which suggests that it can increase its penetration of the Western European market from 1 per cent to-day, to 5 per cent, by 1982.

Distribution

At the same time both Bedford and Ford, originally built-up by their U.S. parents on the basis of supplying the Imperial Preference territories, are stepping up their efforts in the EEC, where they now have reasonably well-established distribution systems. This is why their expansion into the heavy goods vehicle sector is being treated so seriously by their competitors: being the prestige products of the industry, the big trucks provide the ideal spearhead for penetrating a new market, to be followed by lesser products.

While the EEC invasion is attempted, however, the British companies will clearly try to cling on to their traditional overseas markets. One of the strengths of the British industry

is its flexible approach over 31 tons GVW. The Ryder report on BL set an ambitious target for the truck and bus division, which suggests that it can increase its penetration of the Western European market from 1 per cent to-day, to 5 per cent, by 1982.

producers in the lower weight ranges: Japanese pick-ups have been an immense success throughout the Middle East—replacing the camel, it is said, for the nomads—and, to take another example, the Toyota Landcruiser has proved a major rival to the Land Rover throughout the world.

At the same time both Mercedes and Fiat are continuing to step up their overseas efforts. Mercedes from a strong historical position in exports, and Fiat from a base of good contacts throughout North Africa. In Iran, Mercedes is currently the largest producer of trucks and buses, followed by British Leyland. BL itself is making a big push into Africa.

Although at the moment the world truck market is suffering from the recession, there are better hopes for swift recovery in sales than for cars. In particular the capacity problems which will plague the European car industry for the next few years are missing; there remain major opportunities for a healthy export trade.

Terry Dodsworth

Vans and light trucks

UNTIL the large increase in production capacity for European heavy trucks began to come on the market about 12 months ago, the most competitive sector of the commercial vehicle industry was undoubtedly in the lighter vans and trucks.

Almost all the European car manufacturers—Ford, Vauxhall and British Leyland in the U.K., Mercedes and Volkswagen in Germany, Fiat in Italy and Renault and Ince in France—were well entrenched in the business. At the same time they were fighting the marketing battle on a highly priced competitive basis.

The major investment switch to heavier vehicles has inevitably distracted attention from the lighter ranges, and lifted the most intense competition to the top of the market. At the same time sales of smaller vehicles have held up better this year than expected. For example, in the U.K., registrations of vehicles under 6 tons have declined by rather less than 10 per cent, against a 15 per cent drop in sales of heavy trucks of over 24 tons gross vehicle weight, and a marked slip in sales of construction vehicles.

Within Europe, Britain has a major opportunity for exports in the light and medium-weight truck sector. In the medium-weight range of trade distributive vehicles, the Ford Transit, made both in Britain and Belgium, has established itself throughout Europe as a tough competitor, winning sales strongly in both Italy and France as well as Ford's native territories of U.K. and Germany. The Bedford CF and the British Leyland Sherpa have also proved competitive vehicles, with the Sherpa beginning to win back sales against the lighter Transit in Britain partly because of its ease of servicing and well-tried components.

New challengers, however, are continuing to emerge in this field. The Japanese, for example, have made huge strides in the last decade, with products ranging from a variety of pick-ups, to the Toyota Landcruiser, which compete with the Land Rover in many markets, to light vans which, in the Toyota range, are beginning to establish themselves in the U.K. Japan easily outstrips any European nation to-day in its total commercial vehicle manufacturing resources.

In export markets this has given the Japanese companies considerable muscle. For example, in both the U.S. and the Middle East Japanese pick-ups, a vehicle configuration now out of favour in Europe, have carved out a strong position. In the U.S. pick-ups are often used as second or third vehicles, while in the hot Middle Eastern climate, where weather protection is less important, they are used as beasts of burden. In Australia and New Zealand, and throughout the Far East, the Japanese companies also have a strong grip on the market. Europe, however, remains relatively self-sufficient in commercial vehicles, and in the light van sector has spawned a

variety of contestants over the last few months. Among these is the Leyland Sherpa, and front-wheel drive vehicles from both Fiat and Citroen, which had worked on a joint development before breaking off their partnership.

With Mercedes already well established in this field since its takeover of Henschel-Hanomag (whose vehicles were substantially redesigned by Mercedes), the customer is now offered a wide variety of choice. The strength of the British companies in this competitive situation is their price, since it was the British-based designers, influenced by American thinking on value engineering, who first grasped the idea that these vehicles could be made to less exacting standards than is common in the industry, since the kind of loads they carried, and the work they were put through, was less demanding than for heavier trucks.

Loading

Like the light vans, light and medium-weight trucks come in for a variety of uses. In general their work is concentrated in the distributive trade, which may mean a pattern of long or short trips, and certainly implies a variety of loading weights, unlike the business generally contracted in the heavy weight ranges. Once again, the value engineering strategy applied by both Ford and Bedford to this business have given them considerable strength in the market place, but it remains an attractive area for most manufacturers because the distributive trades tend to swing less violently in response to economic depression.

Hence Volkswagen, for instance, is this year coming into this market with its LT truck, a new vehicle which uses a Perkins diesel engine as well as a petrol version, and which is designed to compete with the Ford Transit and Bedford CF. The company is aiming to sell some 4,000 of these in the U.K. in its first year—an ambitious target given the problems most EEC manufacturers have found in meeting the price competitiveness of British manufacturers.

The medium-weight truck sector, covering vehicles from 6 to 16 tons gvwt, has also led to one of the most unusual and radical adventures in European truck manufacturing in recent times. This is the so-called "Club of Four" programme, linking Volvo in Sweden, DAF in Holland, Saviem in France and KHD in Germany.

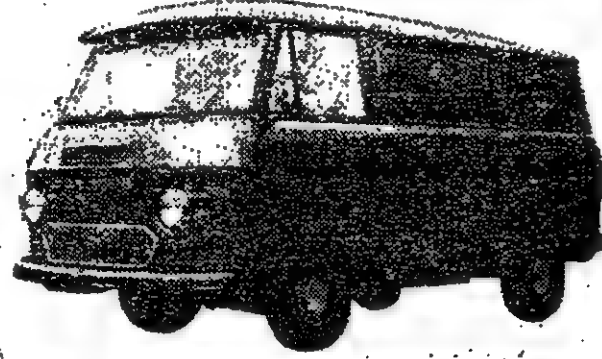
The link was forged in response to the increasing integration and size of the major European manufacturers, notably Mercedes, Fiat and the big British manufacturers, who were able to straddle the whole market with their products. The Club concerns set up a joint company, registered in both Paris and Amsterdam, to design and develop a common vehicle for assembly at their own plants at Eindhoven, Ulm, Blainville and Ghent. Purchasing and engineering is done separately, while production and marketing are the responsibility of the individual companies.

In some respects, substantial savings can be made on such a vehicle programme, partly by splitting development costs between four companies, and also by standardising on components: ZF gearboxes, for example, are universally used, and each has a French-made cab (assembled by the individual manufacturers). The basic difference is in the engines, with each company free to develop its own.

Whether such projects can be repeated remains to be seen. Although many truck company executives believe that the only hope of survival for smaller producers is to become involved in such joint ventures. The fact is that a wide variety of choice has been made available to the

customer in Europe as trade barriers came down, and while this may be expanded still further by imports, it is difficult to see the scope for the number of companies now supplying the market.

Terry Dodsworth



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COMMERCIAL VEHICLES VI

Diesel sales a growth area

THE ONE unquestioned growth area in the world motor industry this year has been in diesel engine production. While this has affected the car industry—Peugeot of France, for example, stepped up output of its diesels by 30 per cent. last year to produce more than 100,000 diesel cars—the greatest impact of the development has been in light commercial vehicles. In this sector of the industry the diesel's disadvantages—weight, noisiness and lack of performance—are less important than its advantages in terms of fuel economy and low running costs.

Costs have proved the dominant factor of diesel usage over the years. For example, in America all goods vehicles, including the very heavy trucks, have tended to use petrol engines because there was little point, on cost grounds, in transferring to diesels. In Britain and

Europe, virtually all heavy goods vehicles over 10 tons use diesel engines: since these trucks are bought to last for a long period—unlike the average small van which usually changes hands after two years—the extra capital cost of the dearer diesel engine is more than offset by the reduced running costs.

In the U.K. diesel engine production has been fragmented between several manufacturers, in contrast to the general European practice—followed unwaveringly by Mercedes and Fiat—of in-house production. Some of the companies within what is now the British Leyland truck and bus division, have always been active producers—for example, AEC and Leyland Motors—but even they tended to offer alternative "proprietary" engines because there was little point, on cost grounds, in transferring to diesels. In Britain and

Europe, virtually all heavy goods vehicles over 10 tons use diesel engines: since these trucks are bought to last for a long period—unlike the average small van which usually changes hands after two years—the extra capital cost of the dearer diesel engine is more than offset by the reduced running costs.

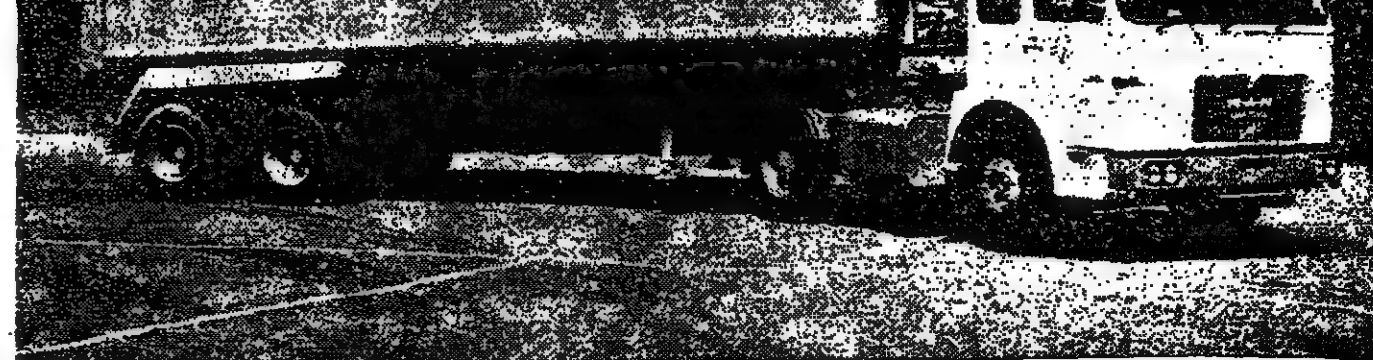
Variety

Because of this historical development the situation today is that there is still a large—and vigorous—variety of diesel engine manufacturers outside the major truck companies, the chief among them being Cummins (U.S.-controlled), Gardner and Rolls-Royce, British Leyland also remains a major producer, but companies like Foden, ERF and Seddon Atkinson offer a wide range of proprietary engines.

Growth in this sector has been inevitably inhibited this year by the downturn in the market, although Cummins, for example, has won the important

contract to supply engines for the new Ford Transcontinental range, and Gardner has over the years followed an extremely cautious policy in estimating demand. However, in the light of the range of the last 12 months have seen an explosive expansion of demand, as operators in both home and export markets have sought to convert their fleets to diesel fuel as quickly as possible.

The main beneficiary of this trend in the U.K. apart from Cummins (U.S.-controlled), the diesel component suppliers such as CAV, is Perkins, the Peterborough-based and U.S.-controlled company which has an established strength at the lighter end of the market. Perkins has a healthy and growing export market, has tied up a manufacturing deal with Hyundai, the new South Korean motor company, which is planning to produce its first car later this year and will then expand into commercial vehicles.



The M.A.N. 43.3-ton diesel.

to supply Volkswagen with the engine for its new LT truck. VW's first light commercial. The Peterborough company has also recently tied up a deal with Hyundai, the new South Korean motor company, which is planning to produce its first car later this year and will then expand into commercial vehicles.

Demand for diesel engines to power the smaller commercial vehicles is reckoned to have increased this year by about 15 per cent. on a world-wide basis. Both of Britain's major light diesel manufacturers, Perkins and Ford, claim that they are finding it hard to keep pace with demand, and both are increasing their investment in this range of engines.

Perkins is investing some £10m. in new plant and development this year, having spent a similar sum last year, and Ford is planning to increase investment in its York engine which is fitted to both the Transit and the A series of light trucks. Since Ford began making its own diesels four years ago—previously it had used Perkins engines—their use

in the Transit range has gone up from 10 to 25 per cent. The buying patterns for both Bedford and Commer light vans bear out the evidence of Ford, since sales of diesel-powered vehicles have held more than steady against a decline in petrol-engined versions.

Elsewhere in Europe, diesels tend to have a tighter grip on the lower weight ranges of trucks. This is particularly so in Germany, the home of the diesel engine, where Mercedes—using the same engine for its light vans as the 240 saloon car—has a strong grip on this sector of the market. In France both Peugeot and Saviem produce diesels, and in Italy Alfa Romeo offers another range.

The present trend towards the diesel engine in Britain is now beginning to develop all the signs of permanency, with diesel sales rising steadily against a generally declining market. If the trend continues there is a strong possibility that diesel manufacturers could capture at least half of new U.K. registrations in this sector by 1978. This would compare with only a 30 per cent. share

in commercial vehicles below 6 tons gross vehicle weight at present.

In the heavier-weight ranges the big question hanging over the market at present concerns vehicle weight legislation. Europe still tolerates a variety of upper sizes of trucks on its roads, but in due course the EEC will lay down regulations on maximum weights and axle loadings. The decisions on whether to develop more and more powerful engines—their several manufacturers, for example, Fiat, are experimenting with turbochargers—will to some extent depend on the approach the EEC adopts.

Pollution

In recent years most engine development has been closely tied to legislation—much to the annoyance, at times, of the manufacturers. But governments, concerned to reduce noise and pollution, have applied considerable pressure on this aspect of engine development. Many of the truck industry's engineers now claim that this development has

gone far enough, and that it is pointless to try to reduce noise levels further since the noise produced by engines is no greater now than that created by tyres.

Hence more of the emphasis on engine development over the next few years may well be in terms of efficiency. It is not clear as yet what influence that will have on the policy differences between those manufacturers who make all their engines and transmissions in-house and those who provide a number of options by buying from outside suppliers.

But it is significant that Ford, having thought hard about making all its major components for its new range, decided to go the proprietary route, and that even Fiat, one of the most vertically integrated truck companies in Europe, is taking advice on turbocharging from a British engine company, and has declared an interest in expanding its component buying network.

Terry Dodsworth



The Volkswagen LT light van.

Steady progress towards common standards

OVER THE last few years new legislation has assumed an importance in the commercial vehicle industry. The reasons are not hard to find. Public concern over the environmental consequences of vehicle noise and engine pollution have been one major factor. Equally, governments have been forced to adopt a cautious attitude to the pressure for increasing truck weights, both for safety reasons and the opposition that has developed towards the juggernaut. Thirdly, the whole of the European industry is now being enmeshed within a widening framework of legislation as the EEC sets about establishing common standards for both vehicles and haulage operations.

The work on environmental regulations has taken place mainly on engines and cab design. The effort to reduce noise has made a significant improvement to the new range of vehicles which are now coming on stream, although most engineers believe they are now approaching a point where further development is negated by road noises. At the same time there is an understandable desire among engine designers at the moment to get back to work on developing power and efficiency, having put a major part of the research effort over the last few years into Government-inspired projects.

At the same time, standards of cab design have advanced out of all recognition over the last few years. There are two sides to the question of improving cabs, the reduction of noise inside it, which benefits the driver, and the reduction of street level noise to the benefit of the general public.

Exacting

Although the standards set by legislation are regarded as fairly exacting by the industry, external noise levels, particularly when engines are under pressure or vehicles are travelling at speed, still leave a lot of scope for improvement. Whether the problem can be overcome, at a reasonably economical cost, is a moot point: many industry executives argue that the public has to bear some price for the benefits conferred by the expanding haulage industry.

The improved interiors of cabs, however, have undoubtedly given drivers a much more acceptable environment over the last few years. Seats are more comfortable, power steering the rule in larger size trucks, the ride has been made

much smoother and extensive padding has eliminated the harsher noises so that an average modern truck can be driven without the driver being aware of much more noise than in a modern car. At the same time, heating and ventilating systems and radios are universal. The construction of cabs, particularly cab roofs, has also been strengthened to give greater protection in accidents—lorry drivers are particularly vulnerable to loads pushing forward from the rear to slide over and crush the cab.

The issue of increased weights is particularly important to manufacturers working on new model lines. The U.K.'s hesitancy to increase vehicle size in the 1960s, for instance, is one of the reasons why Continental manufacturers managed to achieve such a strong lead in the field; it also partly accounts for the shortage of heavy vehicles when the legislation to go up to 32 tons was finally introduced, and the opportunity that gave to the importers to walk in and grab a large part of the U.K. market.

In spite of all the hitches, EEC legislation and regulations are steadily standardising the European industry: for example, the Community closely regulates vehicle travel across frontiers, allocating national rights on a quota basis. As this kind of control expands, the European com-

panies are being pushed into a situation where manufacturing differences become proportionately less important to the customer than marketing, service and back-up facilities. This is the classic situation for encouraging mergers and rationalisation, and one important effect of EEC legislation may eventually be to create a much more streamlined industry.

At the same time, as trucks become heavier and larger, the pressure to keep them away from major population centres and from congested car routes will build up. So far, the idea of truck routes—like bus-only routes—has not met with much success, but there is still a strong lobby in favour of such a policy. Much depends on the growth of distribution systems: but if the predictions of the escalating demand for moving goods about Europe turn out to be correct, and if the major burden of that falls upon the road system, it is difficult to see how Governments can avoid introducing further regulation.

Terry Dodsworth



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COMMERCIAL VEHICLES VII

Trailer controversy continues

THE PROBLEMS of the trailer of years have been worsened by the successful onslaught of European producers precisely the difficulties of the on the British market. For the road haulage industry as a trailer manufacturers' like whole. However, there have been a number of factors which have aggravated the myriads of smaller specialist the downturn. For the future, concerns difficulties have been soul-searching over whether aggravated both my historical investment is worthwhile and technical factors, while the because of threats of national successful marketing of a sation and general economic number of foreign trailers here prospects has been made more for the first time is considered problematic by uncertainty over ominous by many who pre-vehicle weight legislation. viously considered the U.K. market a strictly domestic

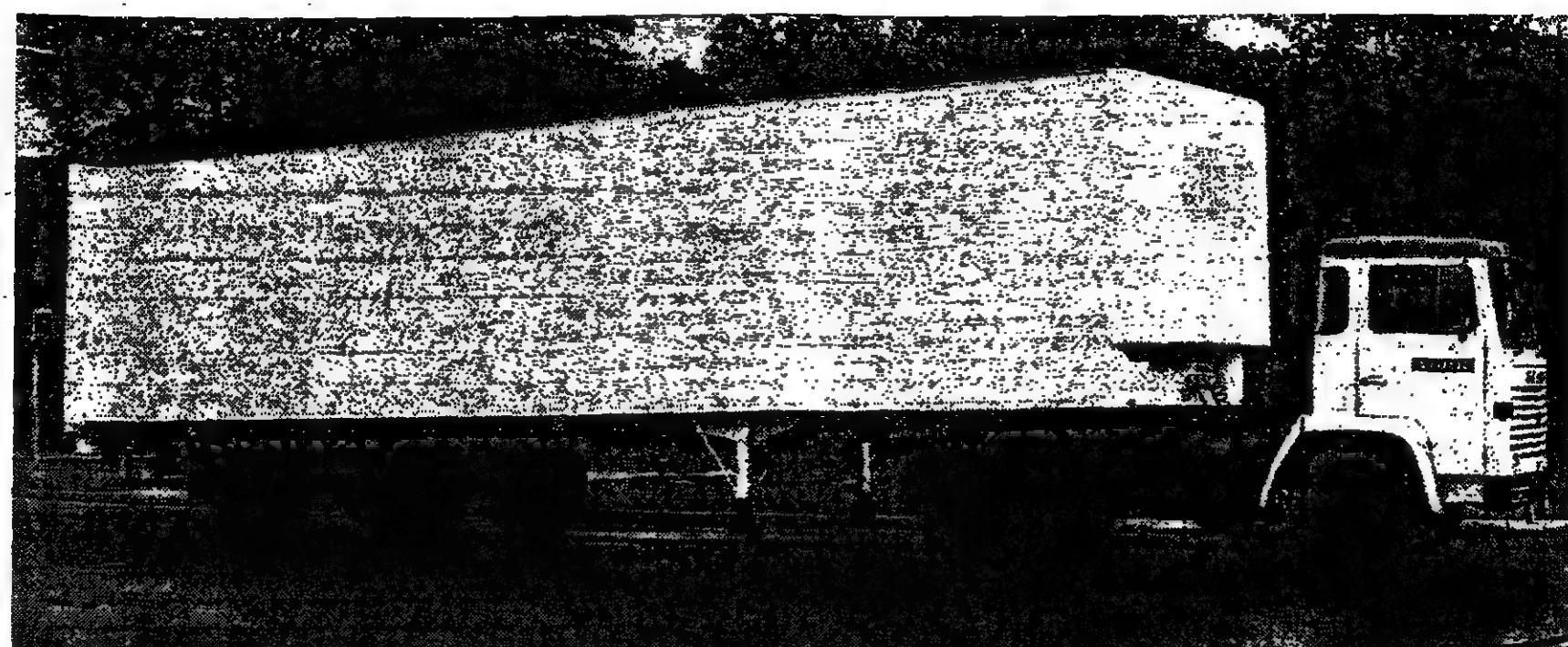
As far as the trailer industry is concerned, the biggest boost which it can hope for is Parliamentary approval for an increase in gross vehicle weights of trailers than tractors when to 38 tonnes. Such legislation there is a call for pruning would stimulate business at the budgets because risks of break-four and five axle articulated down and costly "downtime" and "road train" and of the are much less. Trailers are business. This issue of maxi-mum weights has proved a so there is less that can go major stumbling block to trans- wrong with them. When some- port between member countries thing does go wrong it is also of the EEC, and although there usually much easier to repair. is a good deal of inter-state This means that patching up road haulage, the array of dif- ferent weight, construction and load distribution specifications where repair costs begin to in the various Continental countries still presents a daunt- ing proposition to the "har- monisers" of Brussels.

The chain of events which leads to a cutback in investment during a downturn in the economy is the same in road haulage as in any other in- dustry—a drop in business forces a cutback in operations involving making workers re- dundant, shelving capital ex- pansion plans and cutting replacement expenditure to the bone. This has been seen all too clearly in the experience of the tractor manufacturers, whose problems over the last couple

Impulse

The other side of the coin is that the trailer unit is far less expensive than the tractor, so in some cases, the haulier may buy "on impulse".

In historical terms, the down- turn has been all the more severe for following ten years of almost uninterrupted growth. The period since 1964 has been one of expansion in the wake of increased vehicle weights and lengths and the ever-growing importance of the articulated



A York trailer.

lorry. Trailer output peaked at around 20,000 heavy units in 1973, while last year saw a drop to some 19,000, although this figure did not fully reflect the decline in demand and there was a marked increase in stock levels. Earlier in the year it was projected that production this year would stabilise at around last year's level, but these estimates now appear to be optimistic.

The main cause of this decline has been the fall off in demand for the ordinary flat- back trailer, which has always provided the bread and butter business of the U.K. trailer in- dustry. Crane Fruehauf, for

example, the largest of the British manufacturers, was forced to prune its workforce on the flatback side and its experi- ence was typical of other manu- facturers. The situation with trailer vans and TIR units has not been as bad, with the latter receiving a counter-cyclical boost from the increase in haulage activity with Europe, the Middle East and Africa. In addition, the export market has been showing some healthy signs, with the leading manu- facturers and a number of smaller specialists all increas- ing the amount of their over- seas business.

York now sends more than 25 per cent of its output over- seas; Crane Fruehauf exported as much, in value terms, in the first quarter of this year as in the first three months of the whole of 1974, while Crane is building up business with half a dozen major Middle Eastern countries. M and G sent around 20 per cent of its output last year to Europe and Africa.

Crane Fruehauf landed two large contracts at the beginning of this year. The first was with Hungarocamion, the Hungarian state transport organisation, which ordered 100 refrigerated trailers while the other, obtained from Seaman

Pak in Tehran, was for 200 tilt trailers. These two helped bring the overseas business in the first three months of the year to around £4m. Around a third of York's growing exports now go to the key growth areas of Africa and the Middle East, which is twice the proportion of eighteen months or so ago. In all, York has doubled its export business over the last four years.

Contracts

Crane Industries' wholly-owned manufacturing sub- sidiary Cravens Hommaloy and

Taskers Trailers, which together hold some 15 per cent of the U.K. trailer market, have recently won trailer contracts from Iraq, Abu Dhabi and Lebanon, while the company also points out that a number of orders won from British com- panies will ultimately be shipped to the Middle East. J and J Dyson's trailer sub- sidiary M and G last year sent getting on for 300 units to Denmark, Holland, Switzerland, Australia, Libya, Kenya and Nigeria.

The U.K. rate of inflation, which continues to run at twice the level of most of our trading

partners, remains a constant threat to export business. Although the impact is alleviated to a degree by the down- ward float of sterling, the fall in the value of the pound also serves to fuel the inflation further by boosting the cost of imported raw materials.

The economic problems of the last couple of years have led to a thoroughgoing reappraisal of the means of financing trailer sales. Until the end of 1973 and the beginning of the fuel crisis, around a third of trailer sales were financed through "traditional" bank and finance house sources. This figure incorporated sales to rental companies, so sales to "straight" haulage businesses probably did not account for much more than a fifth of total business.

However, the cash flow problems of the last couple of years have led to a much greater proportion of external finance as well as rapid growth in areas such as tax leasing.

Leasing's advantages have been dramatically emphasised over the last eighteen months, as the cost of new trailers has escalated. In addition, other schemes, such as rental-with- option-to-purchase, have pro- liferated in an attempt to get trailer sales moving.

The trailer companies have thus shown their flexibility in dealing with the crisis period of the last couple of years—helped by the exports—but although there seem to be signs of recovery in the domestic market, the glimmer at the end of the tunnel remains a little dim.

Peter Foster

Caravans take a knock

MOTOR CARAVANS, seen as one of the profitable growth sectors for commercial vehicles, have taken a knock over the past two years. From U.K. sales of 15,000 to 16,000 a year in 1972 and 1973, demand dropped last year to around 8,500 and sales this year are not expected to be more than 5,000.

As production schedules have been phased down in the wake of this downturn in demand, redundancies have resulted and several of the smaller com- panies carrying out conversions have closed down.

Accurate statistics are difficult to obtain as the definition of motor caravan tends to be rather loose. The term is gener- ally taken to mean vehicles, such as the Volkswagen Continental, which can be used both as a normal family car and for hol- idays. Usually the vehicle is equipped with a small sink unit and perhaps four bunk beds.

Popular

The trailed caravan has always been popular in Britain and, with increased leisure time and growing prosperity, the motor caravan assumed an important role. The British market is now probably second only to that of America where the motor home tends to be far bigger and grander and where sales in 1974 were well over 100,000.

Though 1973 was a good year for the motor caravan industry in the U.K., two events were instrumental in checking the future growth of sales: the imposition of Value Added Tax in April followed by the energy crisis later that year. In common with the rest of the motor industry, demand tended to sag in 1974 as purchasers adjusted both to the higher price of petrol and to an economy that was moving towards recession. Motor caravans often operate a very low annual mileage as they tend to be used primarily for holidays and as a second car. Once the gloom and uncertainty of recession begins to take hold people will retain a vehicle a little longer rather than replace it.

A further handicap to sales came this year in the Budget when Mr. Denis Healey, the Chancellor of the Exchequer, decided to make motor caravans liable for the 10 per cent tax paid on motor-cars. VAT remained at 8 per cent.

Manufacturers of the vehicles find it difficult to isolate the impact of the new tax and regard it as yet another additional cost. The problem that inflation has caused is apparent from a quick com- parison of price lists with those of just 12 months ago. To take one example, the Ford Motor home, which in September 1974

retailed at £2,875, was priced this September at £2,924.

Confirmation, if any were needed, that the higher prices are restraining sales comes from the reports of heavy demand for second-hand vehicles.

Despite the current setback, there is a widespread belief that in the longer term prospects are good. Once the national economy begins to pick up towards the end of 1976, if current forecasts prove correct, then the customers should return. The salesmen point out that at a time when hotel bills are rising a motor caravan is a good way to cut the price of holidays.

One man who reflects the confidence of the sector is Mr. Iain Macpherson, managing director of CI Autohomes, a company which claims to carry out conversions for a third of the vehicles sold in the U.K. market. "The market has bottomed out. We have gone through a period of retrenchment and in 1977 we shall start feeling the benefits of the upturn."

He points to the growth of motor caravan hire as one factor which will help to compensate for any fall in direct sales to customers. Despite the gloom, companies offering hire facilities have enjoyed a good year and Mr. Macpherson believes such services will be used increas- ingly by foreign tourists visiting the U.K.

CI, or Caravans International, was formed through the merg- ing of many independent caravan producers and is one of Europe's leading manu- facturers of trailer caravans. However, the potential for motor caravans is also appreciated and Mr. Macpherson's company is looking for growth.

Exports

CI converts Bedford, Chry- sler and Toyota vehicles to motor caravans but has an interesting arrangement with Ford to promote exports. Ford, after a long period of showing little interest in the sector, is out to increase its share of the market and in the Transit van has a vehicle suitable for con- version.

Accordingly, in addition to sales in the U.K., CI exports bodies to Belgium where they are married with Ford Transit chassis and sold throughout the Common Market countries. Mr. Macpherson sees this export drive as one way to compensate for the downturn in the home market.

Volkswagen, whose sole authorised converter in this country is Devon Conversions, claims that it meets around 40 per cent of the U.K. market

needs. VW was one of the first companies to realise the poten- tial of the demand for recreation vehicles and has always had a strong presence in this sector in the U.K.

Only a few of VW motor caravans are imported in a com- pletely made up form. These are supplied by Westphalia, the German motor caravan pro- ducer which is closely linked to VW, and are at the top of the price range. The other two models in the VW range are conversions undertaken by Devon.

Suited

VW, with its rear-engined vehicles and a flat petrol engine tucked away at floor level, is well suited for conversion to motor caravans. The company is confident about future sales in the U.K. and is sure these will be realised once the national economy becomes stronger.

In addition to CI and Devon, there are many other companies which carry out conversions to motor caravans but the dramatic decline in sales has caused a general shakeout of produc- tion. While a number of com- panies have switched their at- tention away from the sector to other products, some businesses have gone into liquidation.

Though VW remains the major importer of vehicles for conversion, Toyota and Fiat are also becoming important. Toyota in particular, with its Hi-Ace and Hi-Lux range has increased its share of the market.

Beyond the prospects for motor caravans in the U.K., there is a great deal of potential still to be realised within Europe. But it seems unlikely that European tastes will ever become as grand as those of America.

The greater prosperity and proclivity to consume within the U.S. has created a major market for motor homes. The typical American motor caravan will be based on a three-to-five ton chassis and will be accordingly much more spacious. Rather than just the basics, facilities are likely to include air condi- tioning, refrigerators and a television.

The usual pattern of produc- tion is for specialist manu- facturers to buy in the engine and bodywork. By adopting produc- tion line methods—a trend being copied in this country, particularly by CI—costs can be held down.

Without going to the extremes favoured by the Americans, manufacturers in the U.K. should be able to produce designs to meet the needs of what must be a growth market over the next decade or so.

Arthur Smith

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TM1700	4x2 RIGID	160	11.24	16.00	24.60	500	151	5SP. TURNER
TM1700	4x2 RIGID	193	11.13	16.00	24.60	500	151	5SP. TURNER
TM1700	4x2 RIGID	193	10.47	16.00	32.00	6V-71	216	9SP. FULLER
TM1700	4x2 RIGID	206	11.09	16.00	24.60	500	151	5SP. TURNER
TM1700	4x2 RIGID	206	10.43	16.00	32.00	6V-71	216	9SP. FULLER
TM2250	6x4 RIGID	147	15.84	22.00	25.60	500	151	6SP. EATON
TM2300	4x2 TRACTOR	109	18.30	—	22.64	500	151	6SP. EATON
TM2500	4x2 TRACTOR	118	19.90	—	24.60	500	151	6SP. EATON
TM2600	6x4 RIGID	175	17.69	24.00	25.60	500	151	6SP. EATON
TM2600	6x4 RIGID	175	17.11	24.00	32.00	6V-71	216	9SP. FULLER
TM2600	6x2 RIGID	200	17.92	24.00	25.60	500	151	6SP. EATON
TM2600	6x2 RIGID	200	17.36	24.00	32.00	6V-71	216	9SP. FULLER
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Let Ziebart finish the job. It'll be a rotten shame if you don't.

WHILE BRITAIN'S car industry has become small-scale even in European terms, its commercial vehicle industry has maintained its place as one of the largest in Europe and is still a major force in world export markets. Within this overall situation the industry has undergone a considerable change in structure over the years.

In 1959 there were some 50 independent CV producers in the U.K., each of some significance in the bus and truck market. By 1975 ten competitors remained, four of which — Ford, Bedford (GMC), British Leyland and Chrysler — accounted for about 98 per cent of total production. However, in the heaviest vehicle class of 28 tons and above the "other" firms still have over 30 per cent of sales, while in the 24-ton plus "rigid" market Foden's eight-wheelers have around 37 per cent of the market, just behind Leyland's 40 per cent. It is in this heavy vehicle sector, the bus market and that for highly specialised "environmental" vehicles — refuse collectors, fire engines, etc. — that the small firm survives.

Many of the companies competing in 1959 concentrated on the light and medium weight sectors. Consequently, when the mass producers such as Bedford began to move up the weight scale, utilising their efficient low unit cost manufacturing techniques to the full, the smaller producers could not justify the price premiums they needed to stay viable through a commensurate difference in quality. The result was sufficient financial embarrassment for companies either to leave the industry completely or be absorbed by other, mainly heavy vehicle, producers.

In the post-war period three specialist firms emerged as being larger than average: Leyland Motors, Associated Commercial Vehicles and Jaguar (Daimler-Guy). In addition, Chrysler's long-established subsidiary at Kenilworth had facilities to make over 5,000 chassis a year. The first three groups absorbed other makers and then merged among themselves, all eventually coming under the umbrella of BLMC.

Eroded

Such was the concentration of managerial and financial resources at BLMC on the reconstruction of the car side's fortunes, that the truck and bus division, which, apart from Bathgate and the Leyland Motors and Jaguar CV operations, was neglected and BLMC's strong initial position in heavy CVs was eroded. Much needed investment in plant expansion and modernisation, and in new products, was sacrificed to expenditures on the less profitable car side.

This, allied to conservative investment policies by the specialists, meant that the excess demand for heavy CVs, significant since 1964, became acute between 1970 and 1974. This state of affairs increased imports so that by 1974 Sweden's Volvo had 19 per cent of the 28-tonne gross and above market, to BLMC's 33 per cent, ERF's 13 per cent, Foden's 6 per cent, and Seddon-Atkinson's 12 per cent. In 1974 the total import share of the heavy CV market was 34 per cent, and for vehicles capable for use at over 32 tonnes, 46 per cent.

The U.K. makers have retaliated, for whereas in 1972 the "others" in the U.K. heavy CV industry had a combined capacity of 7,000 chassis a year, by 1976 this is likely to be around 18,000. In addition, first-class products such as Leyland's Marathon truck are coming onto the market at a rate of 2,000 units a year. Despite the phasing out of Guy production at Wolverhampton, some 2,000 units a year, there has been considerable expansion in U.K. heavy CV making facilities. This increased availability, allied to a downturn in the market, produced a significant drop in import penetration in 1975. BLMC's monopoly of heavy bus chassis making, plus a long-

PRE-TAX PROFITS ('000)

	Seddon	Atkinson	ERF	Foden	BLMC (Truck & Bus) estimated
1970	517	404	735	1,056	8,000
1971	840	783	915	1,295	8,000
1972	367	—	453	752	6,000
1973	781	—	931	1,144	9,000
1974	—	—	930	301	6,000

BLMC WEEKLY OUTPUT (1975)

Leyland (Lancashire)	150 truck and bus chassis	Guy	45 truck chassis
Albion (Glasgow)	100 truck chassis	Scammell	40 truck chassis
Bathgate	470 trucks	AKC	115 truck and bus chassis
Bathgate	370 agricultural tractors	Bristol	16 bus chassis
		Leyland National	22 bus chassis

SPECIALIST CAPACITY (ANNUAL 1975/6)

ERF	5,000	Bristol	1,300*(1)
Seddon-Atkinson	5,000	Leyland National	2,000*(1)
Foden	7,500	Alisa (Volvo)	300
Dennis	1,000	Metro-Scania	500

MASS PRODUCERS ANNUAL CAPACITY (Approximate)

Car Derivative CVs*(2)	Medium Vans	Trucks Light Medium	Heavy (24 tons +)
Ford	40,000	45,000	70,000
Chrysler	—	15,000	5,000
Bedford	25,000	40,000	30,000
BLMC	50,000	30,000	55,000
BLMC (Land Rover)	55,000	—	20,000

* (1) Associate companies of BLMC.

* (2) "Capacity" depends on car/cv derivative output mix.

term growth in the demand for double deckers, aggravated by a short-term boom, created by the Bus Grant scheme has given an opportunity for new entrants, Volvo's Scottish-based Alisa subsidiary and the British Metro-Cammell company from Birmingham have already made significant inroads, while Foden and, perhaps, Dennis, hope to follow them. Therefore, even in 1975 it is possible to enter the motor industry to serve a central market, as long as productive activities are confined largely to the assembly side.

Vehicle manufacture consists of four main functions: foundry work to produce castings; forging and machining; steel press work; final assembly. Of these, activities assembly has the lowest optimum output level measured on an annual basis. The large capital investment required to establish special-purpose, high-speed equipment means that operations such as cab-making and major component manufacture is only efficiently undertaken, and therefore profitable, in a competitive industry, when very large volumes can be made and sold.

Many quite large Continental heavy vehicle makers have been over-capitalised with regard to the scale of operation undertaken. On the other hand, the U.K. industry has evolved a highly efficient structure which involves even the larger firms in buying out a high proportion of requirements, and a specialised heavy vehicle sector which concentrates mainly on pure assembly, any manufacturing being done by techniques appropriate to low annual output volumes. As a result, even large-scale manufacturers use bought-out items such as gearboxes from even larger-scale component makers, while the small-scale specialists have been able to enjoy external economies of scale.

The small companies, by keeping their assembly operations at a high degree of efficiency (for instance, ERF recently reduced the time for engine installation from four hours to 10 minutes), have survived and prospered by being able to purchase diesel engines, axles, gearboxes, cabs as well as the usual bought-out items such as electrical equipment, from large-scale suppliers who themselves incur the cost and risk of high capital investment in equipment. A small assembler if engaging in cab making will utilise glass-fibre where tooling costs are one-fifth of those needed for a pressed steel cab.

However, as material and other direct costs are greater than at output levels between 25,000 and 30,000 vehicles a year, steel is more economic; but for lower volumes glass-fibre is the more efficient technique, a lesson fully absorbed by British producers. As most small U.K. CV makers tend towards pure assembly with little in-house manufacture and as long as sufficient external economies are obtained for cost plus pricing to be viable, the break-even output levels are normally a very small proportion of total capacity, fixed costs being so low.

It would be very wrong to suppose that because the motor industry and large-scale output appear to be synonymous, that the small-scale CV specialists are at risk in competing with larger firms in the small market for heavy vehicles. In fact, the large-scale Continental makers, often produce engines and cabs at lower output levels, but at higher cost, than British specialists such as Perkins or Motor Panels.

Therefore, by concentrating on the small-scale assembly of premium products utilising bought-out components made in large numbers, the likes of ERF and Seddon-Atkinson have found themselves in a prosperous position. Foden is the most "manufacturing-orientated" of the specialists, but by using simple equipment has managed to keep prices within 5 per cent, or so, of the assemblers, a premium the customer has willingly paid to obtain a fully bespoke product.

However, the company's expansion is based mainly on pure assembly activities; the weekly capacity in 1975-76 being 120 for assembly and 12 chassis a week on the manufacturing side. Despite the greater commitment to manufacturing Foden has tended to generate the highest level of profits in absolute terms, although because pure assembly needs less capital ERF has earned 25 per cent on capital to Foden's 15 per cent over the period 1970-74.

In the period 1970-74 BLMC's Truck and Bus Division produced some 40 times as many vehicles as, say, ERF but the prosperity of the small heavy vehicle specialists is shown by their higher relative profit — small-scale specialists have been

Size

Nevertheless in the heavy sector BLMC is of sufficient size and efficiency, despite past underinvestment, to compete on equal terms with other major heavy truck makers. What is required is extra bus-making capacity and capacity for the manufacture of spare parts.

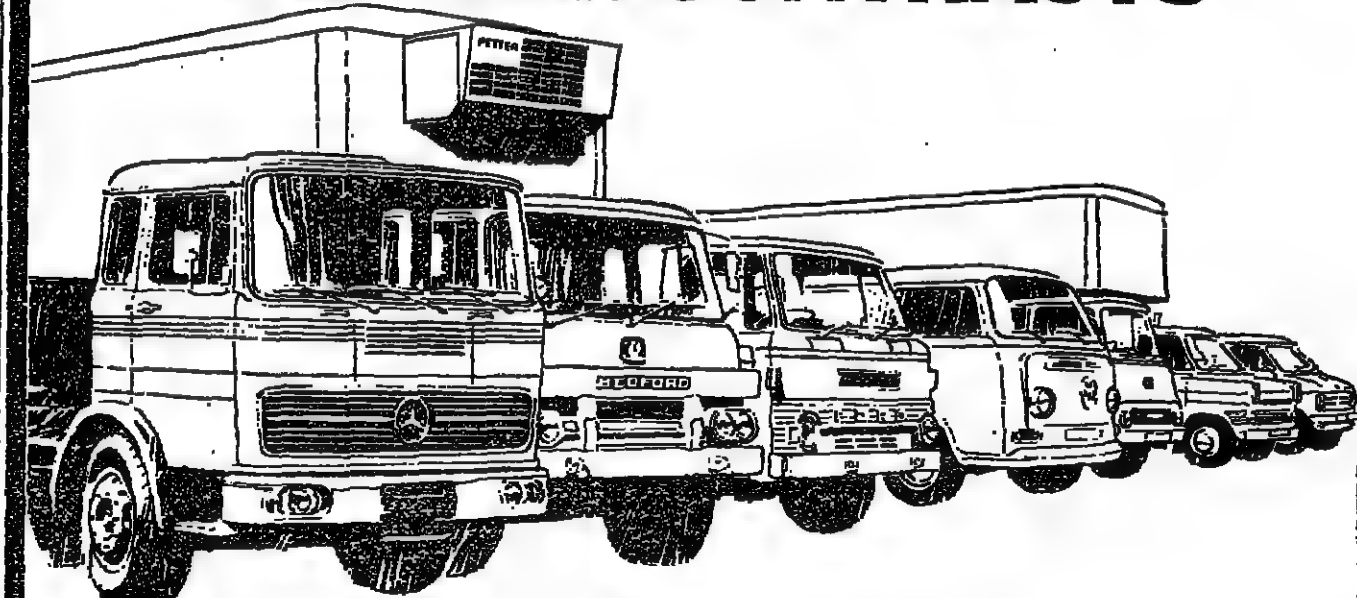
The small scale U.K. CV makers should, with good management, continue to prosper being but the assembly "tip" of a strongly based commercial vehicle component-making infrastructure.

This shows that a small efficiently run firm can survive in competition with larger firms by meeting the specific needs of a small specialised market: a market in 1975 of perhaps 20,000 heavy trucks and buses. As U.K. manufacturing facilities are capable of meeting most of this, many importers in the middle of costly investment incurred in trying to break into the U.K. may find their position seriously at risk and be provoked into starting a price war.

Garel Rhys

Lecturer in Economics, University College, Cardiff

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A wrong turning in the jobless debate

BY SAMUEL BRITTAN

ARMCHAIR strategists are fond of saying that one should not fight on two fronts. Yet sometimes this is quite avoidable. An outstanding example is the interpretation of the unemployment figures, where there are two opposite kinds of misunderstanding which stand in the way of enlightened policy.

On the one hand we have the Heath-Bealey TUC view, wrongly called moderate, or middle-of-the-road, which takes the headline unemployment figure of nearly 1.2m. at face value as indicating a pool of people, hopelessly unable to find jobs. This figure was put at 1.3m. for the ten major industrial countries by the Chancellor in his Mansion House speech last month. The only safe to bring down unemployment to, say, 500,000 by the traditional expedient of pumping more money into the economy ("money").

Equal danger

But an almost equal danger is provided by those who attempt to analyse the unemployment figures down to nothing, who try to draw hard and fast lines between voluntary and involuntary unemployment, and who do not realise that the size of the minimum sustainable level of unemployment cannot, of its nature, be discovered directly by examining the composition of the unemployed.

These reflections have been caused by reading a booklet, which is in many ways excellent, but which falls into the trap just mentioned. This is

John Wood's *How Little Unemployment?* published to-day by the Institute of Economic Affairs. Mr. Wood proposes a "strategic indicator" of men aged 25-55, out of work for more than six months, minus "unemployables." The calculation gives a range of between 400,000 and 120,000 within the last five years, or rarely more than 1 per cent. of the active population. Mr. Wood proposes to use this figure as a "strategic indicator" to guide demand management.

"I have, from the start, been unhappy even with the more moderate 'corrected' unemployment figures published by Sir Keith Joseph's Centre for Policy Studies; but because my objections are somewhat technical and the results are broadly plausible (even if I have not laboured my misgivings, but when the corrections are pressed to the extreme of the IEA paper, it is time to disassociate myself, especially as I am listed as one of those who offered comments."

Mr. Wood's earlier paper, *How Much Unemployment?* published in 1972, was an important pioneer analysis of the deficiencies of the headline unemployment total, and it largely inspired most of my own ideas on how to break down the total into suitable categories. Indeed, his own new paper contains the best guide I know to the labour market data produced by the Department of Employment.

A slump in modern conditions is not for most of the unemployed a state of affairs in which it is "impossible to get a job." It is a state in which people looking for new jobs have to accept worse pay, or wait longer, or move further, accept inferior conditions, or

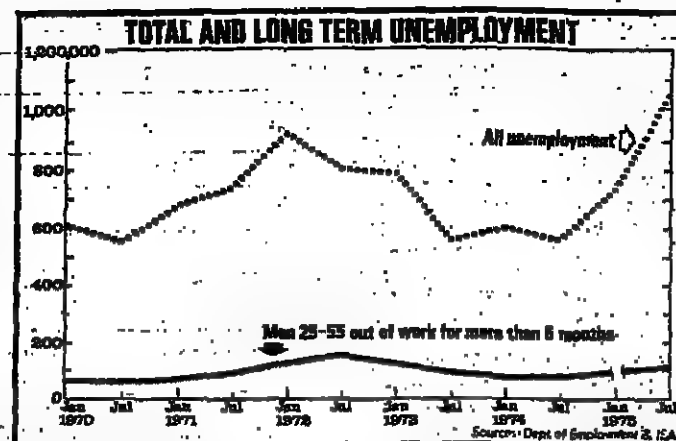
undergo a greater degree of re-training than in normal times; and no unemployment figure can do more than summarise such changes in conditions in a given social security framework. I recently spent some time in the Glasgow South Employment Exchange talking to people starting gloomily at the unskilled vacancy notice board. When I asked what was wrong with the jobs on offer, the reply was invariably "The money. It's no better than we are getting now out of work."

When trade recovers, these workers will have a better choice of jobs and spend a shorter period on the register. But what is the corresponding unemployment percentage which represents neither a runaway boom nor a slump, but a sustainable state of the labour market? This has been called the "natural rate" by Professor Milton Friedman, an unfortunate name with which we are probably stuck.

Analysis

The key to this sustainable or "natural" rate is that it cannot be discovered by a statistical analysis of the components of unemployment. Indeed, Mr. Wood comes near to the point in a footnote on page 11, where he says "Some economists might argue that the continuing increase in earnings and wage rates, unmitigated by similar increases in output" provides evidence of excess demand. The trouble with this view is not that it is generally regarded as old-fashioned, but that it leaves out of account inflationary expectations. If prices have been rising at 20 per cent. per annum and are expected to continue un-

changed, an increase in money wages of that amount would be required to keep real wages constant. In a sustained inflation, double digit wage increases can be perfectly consistent with balance in the labour market. To get wage increases down to the productivity trend, say 3 per cent., would require a slump, that is a period of deficient demand; and excess in demand will show itself (allowing for time lags, etc.) not just in inflation, but in accelerating inflation.



all corrected unemployment figures. Are they supposed to be economic indicators of the degree of slack, or indicators of social hardship? An indicator such as Mr. Wood's, which varies from 0 to just over 1 per cent, can hardly measure the degree of slack in the economy. Bank of England calculations, based on deviations from the long-term trend of industrial production, suggest that production was 2 per cent. above trend in the autumn of 1973 compared with 10 per cent. below trend this summer, a total swing of 12 per cent. Even if there has been, as I suspect, a vertical

downward shift in the trend figure should be convincing. Confining the "strategic" indicator to men aged 25-55 is going far too far in making exclusions at both ends of the age range. But what really bothers me is those who have been on the register for six months or less are excluded. This ignores the fact that many of these people will continue on the register for a good deal longer by the time they obtain a job. Even if one believes that those out of a job for less than six months are short-term job-changers, the number will be approximately represented by those now on the register for less than two or three months. (See Department of Employment Gazette, March 1975.)

In fact it is no longer necessary for outside bodies to calculate "adjusted" unemployment totals at all, since the Department of Employment has been doing this already since this summer. The monthly Press notice now contains a figure of unemployed for over four weeks (statistically equivalent to the number who will remain out of work for up to 12 weeks) aged 60 and under. These amounted to 754,000 in October. There is an argument for taking off another 100,000 to allow without double counting for the absolute numbers regarded as "poor prospects" and "unenthusiastic" in the official 1973 survey; and it would be desirable to have the figure seasonally adjusted. But the DE has gone a long way to meet the critics of its statistics, and it might therefore be better to reconcile ourselves to less ambitious employment objectives and avoid the stop-go oscillations we have suffered as a result of temporary boosts by impatient Ministers.

But even to achieve this educational or propagandist role, Mr. Wood's analysis of the misguided policies pushing up the natural rate of unemployment is very much to the point. I would wish to live.

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If I do not emphasise them more in this article, it is because they are common ground and have been discussed on this page before. Indeed, it is because these distortions of the labour market are so paramount that I doubt if the unemployment problem is as modest as the Wood indicator suggests.

Unfortunate

There is, however, one policy suggestion which is rather unfortunate. This is that, "to be paid more than minimum benefits after six months," an unemployed person should either "have to prove his determination to work or accept attendance at a retraining centre." Very little public money could be saved this way, as earnings-related benefit comes to an end after six months; and the longer a person is out of work the greater is the pressure by officials granting benefit to take a job involving a drop in pay or status.

I am quite sure that Mr. Wood does not mean it this way; but this kind of hint plays into the hands of those who wish to reduce Government intervention because of resentment at the rather modest payments to the inadequate and the maladjusted rather than from a libertarian belief in enlarging freedom of choice. A really drastic clampdown on benefits to stop people "scrounging" or "opting out" may well be politically acceptable (though it is not what Mr. Wood is advocating). If combined with a policy of forcing able-bodied people with private means to work as well, it might satisfy the nation's current notions of fairness and sweep the country. But it is not a country in which I would wish to live.

Letters to the Editor

Press freedom and the NUJ

From the National Organisation of Journalists.

Sir—Mr. R. J. Farmer's latest contribution to the marathon debate over Press freedom (October 29) readers a grave disservice to our readers and not for the first time from Mr. Farmer's organisation to journalists at large.

The idea of Big Brother NUJ censoring industrial correspondents by remote control from its Acorn House headquarters is patently absurd.

Any close observer of the NUJ in recent years would have detected not the take-over of the union by a tiny faction of Left wing militants but the emergence of a loud and sometimes strident — dialogue between active groups of the membership (both Right as well as Left, for want of better terms) every time the union takes a major decision. The registration and Editors debates are the two most obvious examples.

One thing the NUJ clearly cannot do, nor would it ever wish to do, is to impose blanket uniformity on its members — journalists being what they are, they wouldn't stand for it anyway.

And as a former industrial correspondent for more than six years — I even helped cover Labour matters for your own paper — may I also remove any fears on that front. I reported NUJ stories without any pressure from Acorn House whatsoever in the absence of pressure which isn't always the case in Fleet Street when it comes to writing industrial stories of immediate concern to newspaper proprietors.

Readers can draw their own conclusion from the way some national papers dealing with their own internal disputes are content to run bald statements from both sides — a practice not extended to other industries. And even on the FT, which has an infinitely better record than most papers — stories concerning Fleet Street's labour troubles received far closer personal scrutiny from the Editor at least in my experience there, than stories concerning industrial troubles elsewhere.

However, industrial correspondents no less than any other journalists are well aware of an important section of the NUJ's (binding) Code of Conduct — which Mr. Farmer seems to have overlooked in his perusal of our Rule Book — which calls on members to "strive to eliminate distortion, news suppression and censorship."

Noel Howell,
Acorn House,
314-320, Gray's Inn Road, W.C.1.

Opium of the people

From Mr. J. G. Medcalf.

Sir—I refer to the article by Chris Dunkley headed "Opium of the people" (October 29). For people like Chris Dunkley, television is of course a serious business, because writing criticisms is their bread and butter; but for the majority of people, television is entertainment, nothing more. Most of us have to do a hard day's work, cope with many problems and pressures; when we have leisure and an opportunity to look in, we certainly don't want "difficult" plays, esoteric documentaries, worthy current affairs series, progressive/permissive

stuff, etc., etc.—from which defend us!

Too much time is devoted on TV to what I believe is called Politico-Social stuff—much of it is heartily sick of it. It is plugged to distraction, and usually contains subtle propaganda of one sort or another.

Let us have our entertainment, whether it be Crossroads, Cuckoo, or whatever. Let us have our news, whether it be the news, or whatever. Let us have our sports, whether it be the sports, or whatever. Let us have our culture, whether it be the culture, or whatever. Let us have our education, whether it be the education, or whatever. Let us have our health, whether it be the health, or whatever. Let us have our leisure, whether it be the leisure, or whatever. Let us have our life, whether it be the life, or whatever. Let us have our happiness, whether it be the happiness, or whatever. Let us have our peace, whether it be the peace, or whatever. Let us have our love, whether it be the love, or whatever. Let us have our joy, whether it be the joy, or whatever. Let us have our life, whether it be the life, or whatever. Let us have our happiness, whether it be the happiness, or whatever. Let us have our peace, whether it be the peace, or whatever. 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INSURANCE, PROPERTY, BONDS

OFFSHORE AND OVERSEAS FUNDS

Archway Unit Tr. Mgrs. Ltd. (a)(c) 10, Grosvenor Rd., Victoria. 02-281941 Key Capital 22.4 22.4 22.4 Key Income 22.4 22.4 22.4 Key Div. P.D. 22.4 22.4 22.4 Key Gen. Inv. 22.4 22.4 22.4			Bridge Tailman Fd. Mgrs. V (a)(c) 54, Mirfield Lane, E.C.2. 01-281461 Key Capital 22.4 22.4 22.4 Key Income 22.4 22.4 22.4 Key Div. P.D. 22.4 22.4 22.4 Key Gen. Inv. 22.4 22.4 22.4			G. & A. Un. Tr. Mgrs. Ltd. (a)(c) 4, Rayleigh Rd., Brentwood. 02-272220 Key Capital 22.4 22.4 22.4 Key Income 22.4 22.4 22.4 Key Div. P.D. 22.4 22.4 22.4 Key Gen. Inv. 22.4 22.4 22.4			Lloyd Mt. Unit Tr. Mgrs. Ltd. (a)(c) Registrars, The Courney, Goring-on-St. 02-272220 Key Capital 22.4 22.4 22.4 Key Income 22.4 22.4 22.4 Key Div. P.D. 22.4 22.4 22.4 Key Gen. Inv. 22.4 22.4 22.4			Manulife Unit Trust Managers (a)(c) 4, Tottenham Court Rd., E.C.2. 01-281461 Key Capital 22.4 22.4 22.4 Key Income 22.4 22.4 22.4 Key Div. P.D. 22.4 22.4 22.4 Key Gen. Inv. 22.4 22.4 22.4			Prudential Unit Tr. Mgrs. (a)(c) 10, Broad St., W.1. 01-281461 Key Capital 22.4 22.4 22.4 Key Income 22.4 22.4 22.4 Key Div. P.D. 22.4 22.4 22.4 Key Gen. Inv. 22.4 22.4 22.4			Schwab Unit Tr. Managers Ltd. (a) 10, Broad St., W.1. 01-281461 Key Capital 22.4 22.4 22.4 Key Income 22.4 22.4 22.4 Key Div. P.D. 22.4 22.4 22.4 Key Gen. Inv. 22.4 22.4 22.4			Target Tr. Mgrs. (Scotland) (a)(c) 10, Broad St., W.1. 01-281461 Key Capital 22.4 22.4 22.4 Key Income 22.4 22.4 22.4 Key Div. P.D. 22.4 22.4 22.4 Key Gen. Inv. 22.4 22.4 22.4			Trades Union Unit Tr. Managers V 10, Broad St., W.1. 01-281461 Key Capital 22.4 22.4 22.4 Key Income 22.4 22.4 22.4 Key Div. P.D. 22.4 22.4 22.4 Key Gen. Inv. 22.4 22.4 22.4			Transatlantic and Gen. Sec. Co. V 10, Broad St., W.1. 01-281461 Key Capital 22.4 22.4 22.4 Key Income 22.4 22.4 22.4 Key Div. P.D. 22.4 22.4 22.4 Key Gen. Inv. 22.4 22.4 22.4			Walker Walker Tr. Mgrs. Ltd. (a) 10, Broad St., W.1. 01-281461 Key Capital 22.4 22.4 22.4 Key Income 22.4 22.4 22.4 Key Div. P.D. 22.4 22.4 22.4 Key Gen. Inv. 22.4 22.4 22.4			Windsor Growth Fund 10, Broad St., W.1. 01-281461 Key Capital 22.4 22.4 22.4 Key Income 22.4 22.4 22.4 Key Div. P.D. 22.4 22.4 22.4 Key Gen. Inv. 22.4 22.4 22.4			Windsor Income Fund 10, Broad St., W.1. 01-281461 Key Capital 22.4 22.4 22.4 Key Income 22.4 22.4 22.4 Key Div. P.D. 22.4 22.4 22.4 Key Gen. Inv. 22.4 22.4 22.4			Windsor Life Fund 10, Broad St., W.1. 01-281461 Key Capital 22.4 22.4 22.4 Key Income 22.4 22.4 22.4 Key Div. P.D. 22.4 22.4 22.4 Key Gen. Inv. 22.4 22.4 22.4			Windsor Property Fund 10, Broad St., W.1. 01-281461 Key Capital 22.4 22.4 22.4 Key Income 22.4 22.4 22.4 Key Div. P.D. 22.4 22.4 22.4 Key Gen. Inv. 22.4 22.4 22.4			Windsor Share Fund 10, Broad St., W.1. 01-281461 Key Capital 22.4 22.4 22.4 Key Income 22.4 22.4 22.4 Key Div. P.D. 22.4 22.4 22.4 Key Gen. Inv. 22.4 22.4 22.4			Windsor Unit Fund 10, Broad St., W.1. 01-281461 Key Capital 22.4 22.4 22.4 Key Income 22.4 22.4 22.4 Key Div. P.D. 22.4 22.4 22.4 Key Gen. Inv. 22.4 22.4 22.4			Windsor World Fund 10, Broad St., W.1. 01-281461 Key Capital 22.4 22.4 22.4 Key Income 22.4 22.4 22.4 Key Div. P.D. 22.4 22.4 22.4 Key Gen. Inv. 22.4 22.4 22.4			Windsor Yield Fund 10, Broad St., W.1. 01-281461 Key Capital 22.4 22.4 22.4 Key Income 22.4 22.4 22.4 Key Div. P.D. 22.4 22.4 22.4 Key Gen. Inv. 22.4 22.4 22.4			Windsor Zero Fund 10, Broad St., W.1. 01-281461 Key Capital 22.4 22.4 22.4 Key Income 22.4 22.4 22.4 Key Div. P.D. 22.4 22.4 22.4 Key Gen. Inv. 22.4 22.4 22.4			Windsor Zero Fund 10, Broad St., W.1. 01-281461 Key Capital 22.4 22.4 22.4 Key Income 22.4 22.4 22.4 Key Div. P.D. 22.4 22.4 22.4 Key Gen. Inv. 22.4 22.4 22.4			Windsor Zero Fund 10, Broad St., W.1. 01-281461 Key Capital 22.4 22.4 22.4 Key Income 22.4 22.4 22.4 Key Div. P.D. 22.4 22.4 22.4 Key Gen. Inv. 22.4 22.4 22.4			Windsor Zero Fund 10, Broad St., W.1. 01-281461 Key Capital 22.4 22.4 22.4 Key Income 22.4 22.4 22.4 Key Div. P.D. 22.4 22.4 22.4 Key Gen. Inv. 22.4 22.4 22.4			Windsor Zero Fund 10, Broad St., W.1. 01-281461 Key Capital 22.4 22.4 22.4 Key Income 22.4 22.4 22.4 Key Div. P.D. 22.4 22.4 22.4 Key Gen. Inv. 22.4 22.4 22.4			Windsor Zero Fund 10, Broad St., W.1. 01-281461 Key Capital 22.4 22.4 22.4 Key Income 22.4 22.4 22.4 Key Div. P.D. 22.4 22.4 22.4 Key Gen. Inv. 22.4
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	Oct. 31, 1936	Oct. 31, 1937	Oct. 31, 1938	Oct. 31, 1939	Oct. 31, 1940	Oct. 31, 1941	A year ended
Government securities	89.08	87.84	98.08	98.12	87.60	88.12	82.51
Cisco Indemnity	58.77	59.66	58.66	58.66	58.66	58.61	58.89
Industrial Underwriters	—	—	—	—	—	56.77	196.6
Insurance	29.70	29.71	28.99	28.77	29.74	30.12	286.5
Int. Dev. Co. of Ind.	6.05	6.31	6.00	5.98	5.99	5.94	10.16
Insurance Vtd. & Indus.	18.66	18.31	18.87	18.67	18.51	18.50	27.56
Int'l Union of W. & S.	8.54	8.97	8.59	8.76	8.98	8.78	5.07
Leasing, bonded	5.812	5.928	7.779	8.678	7.016	5.901	8.949
Equity turnover	—	64.65	63.78	66.60	55.19	58.97	31.82
Equity margins total	—	14.265	15.841	15.514	18.472	18.821	10.786

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	Oct. 31	Nov. 30	Dec. 25	Dec. 28	Dec. 27	Dec. 24	A Year Ago
Industrial Group	140.14	140.73	141.19	142.78	139.88	141.79	75.67
500 Shares	155.28	155.98	156.54	158.65	155.75	157.37	81.63
Div. Yield pct.	5.90	5.97	5.85	5.78	5.87	5.81	10.25
P/E Ratio (mkt.)	8.83	8.87	8.90	8.98	8.82	8.92	- 4.76
All Shares	150.22	150.95	151.42	153.52	150.80	152.31	76.65
Common yield pct.	14.86	14.96	14.84	14.84	14.84	14.81	47.01

AFT International	11 1/2 %	Julian S. Hodge	12 %
Allied Irish Banks Ltd	11 1/2 %	Industrial Bank of Scot	11 1/2 %
Anglo-Portuguese Bank	11 1/2 %	Jacobs, Kroll	11 1/2 %
Henry Anshuscher	11 1/2 %	Keyser Ullmann	11 1/2 %
Banco de Bilbao	11 1/2 %	Knowsley & Co. Ltd.	12 1/2 %
Banco de Jerez	11 1/2 %	Lloyds Bank	11 1/2 %
Bank of Cyprus	11 1/2 %	London & European	11 1/2 %
Bank of New York	11 1/2 %	London Mercantile	11 1/2 %
Comptoir du Rhone S.A.	11 1/2 %	Midland Bank	11 %
Barclays Bank	11 1/2 %	Samuel Montagu	11 %
Barnett, Christie Ltd.	12 %	Morgan Grenfell	11 %
Bremar Holdings Ltd.	12 %	Northern Westminster	11 1/2 %
Brit. Bank of Mid. East	11 %	Northern Comm. Trust	11 1/2 %
Brown Shipley	11 1/2 %	Norwich General Trust	11 1/2 %
Cayzer, Bowater & Co. Ltd.	11 1/2 %	Portman Guaranty	11 %
Cedar Holdings	11 1/2 %	P. S. Refson & Co.	11 %
Charterhouse Japhet	11 1/2 %	Rossminster Accept'ce	11 1/2 %
C. E. Coates	11 1/2 %	Royal Trust of Canada	12 %
Consolidated Credits	12 %	Schlesinger Limited	11 1/2 %
Continental Trade Bk.	11 1/2 %	E. S. Schwab	12 1/2 %
Co-operative Bank	11 1/2 %	Security Trust Co. Ltd.	12 1/2 %
Coplers Bank	12 %	Shenley Trust	12 1/2 %
Corinthian Securities	12 %	Standard Chartered	12 1/2 %
Credit General	12 %	Stirling Credit	12 1/2 %
G. R. Dawes	12 %	Thames Guaranty	11 1/2 %
Duboff Brothers	12 %	Trade Development Bk.	11 1/2 %
Duncan Lawrie	11 1/2 %	Twentieth Century Bk.	12 1/2 %
English Transcont.	12 %	United Bank of Kuwait	11 %
First London Secs.	12 %	Whiteaway Laidlaw	11 1/2 %
Anthony Gibbs	11 %	Williams and Glyn's	11 %
Goode Durrant Trust	11 %	Yorkshire Bank	11 %
Greyhound Guaranty	11 1/2 %		
Grindlays Bank	11 1/2 %		
Guinness Mahon	11 1/2 %		
Hambros Bank	11 1/2 %		
Hawtlin & Partridge	11 1/2 %		
Hill Samuel	11 1/2 %		
C. Hoare & Co.	11 1/2 %		

*Members of the Acceptance Houses Committee.
 1-day deposits 7 1/2. 1-month deposit 7 1/2.
 3-day deposits on terms of £10,000 and upwards up to £25,000 7 1/2 and over £25,000 8 1/2.
 Demand deposit 8 1/2.

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Wigham Poland growth

Announcing taxable profit of £1.9m for the 15 months to March 31, 1975, compared with £0.000 in the year 1973, Mr. J. M. Poland, chairman of Wigham Poland Holdings, reports that all major operating companies are actively seeking profitable areas for expansion, both organically and by acquisition.

For example the company is keen to take advantage of its association with The Thompson Organisation and contacts overseas to further its experience of the North Sea oil market and in the coming year "the prospects appear favourable."

Dividends for the 15 months total 70 per cent, against 28 per cent in 1973, with a final of 40 per cent.

During the period the company expanded through a merger with Wigham-Richardson and Bevington, whose shares were acquired from Anglo-Continental Investment and Finance Company in exchange for shares and loan stock. The group's business is that of insurance brokers, ship brokers, chartering agents, transportation, forwarding and underwriting agents.

The ultimate holding company is Generale Occidentale S.A. France.

Mr. Poland describes the 15-month period as one of integration, planning ahead and consolidation in the midst of unsettled business climate with costs, particularly salaries, rising steeply. The coming year will see Wigham Poland, formerly Wigham-Richardson and Bevington, continuing to consolidate for the future.

Two major divisions, Reinsurance and U.K. Non-Marine, are forecasting "steady expansion" but in shipping, a world-wide recession will have an adverse effect on P. Wigham-Richardson and, in turn, may depress the Marine Insurance activities, he says. Also, the company cannot look for a cushioning effect from investment income as 0.70p net per unit (0.75p last year) will be considerably reduced.

INTERIM STATEMENT

BAINBRIDGE BROS. (ENGINEERS) LIMITED

(Manufacturers of Prefabricated Units in Aluminium and Steel for the Building Industry)

At a meeting of the Directors held on Friday 31st October 1975 the Board announced an unchanged interim dividend of 0.525 pence per share for the half year ended 31st August 1975 to be paid on 5th December 1975 to shareholders on the register at the close of business on 7th November 1975. The dividend is payable without further deduction and carries with it a tax credit of 0.259 pence per share. This results in a gross dividend of 0.784 pence per share. (1974-0.784 pence per share).

	1975	1974
Profits before tax amount to	43,877	56,371
Estimated provision for taxation	26,000	32,000
Leaving a net profit of	17,877	24,371

The results for the six months period are somewhat disappointing. Despite difficult conditions in the construction industry the company's turnover was maintained, but at margins—particularly in the first quarter—which were less satisfactory than normal. Price increases came into effect during the second quarter, however, and current margins are more consistent with those we have achieved in the past.

Demand for most of our products remains at a high level, and the outlook for the second half of the year is encouraging. With margins now restored the results should show a significant improvement over the first half of the year.

The cash position remains strong, and some diversification of the company's activities is now a high priority for the company's management.

BUILDING AND CONSTRUCTION

The Financial Times proposes to publish a survey on Building and Construction in its issue of Monday 10th November 1975. The proposed editorial content is as follows:

1. Introduction.
2. Housing.
3. Land.
4. The Industry.
5. Overseas work.
6. Labour.
7. Safety.
8. Builders' merchants.
9. Bricks and cement.
10. Other materials supplies.
11. Mechanisation.
12. Plant hire.
13. Building services.
14. Energy conservation.
15. Research and technical development.
16. Contract and tendering terms.

We would point out that the contents and date of the Survey are subject to complete editorial discretion.

For further information and advertising details please telephone 01-248 8000, Ext. 389

FT Monthly Survey of Business Opinion

Statistical Material Copyright Taylor Nelson Group Ltd.

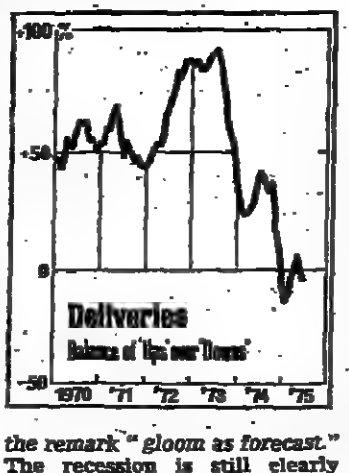
GENERAL OUTLOOK

Confidence revives

ON BALANCE industry sees the present situation as no more depressing than four months ago: to that extent it can be said that business confidence has stabilised, perhaps with a tendency to show a very slight recovery.

The principal factor appears to be the view which industry is now taking of the general economic situation, where companies are making comparisons with the period immediately before the £8 a week ceiling was imposed on pay increases.

On their own corporate situation, the trend is still slightly downward: the general attitude seems to be typified by the remark "gloom as forecast."



deepening and, although inflation expectations have been somewhat abated, a recovery in profitability is not foreseen. In the current situation planning can at best be made only a few months ahead.

Export expectations, hitherto the one bright spot in an otherwise very depressing situation, appear to have been scaled back in recent months. In engineering, de-stocking has been added to the decline in demand in most world markets. Chemical companies report increasing Japanese competition in EEC countries, which are always difficult markets.

GENERAL BUSINESS SITUATION

4 monthly moving total				October 1975		
Are you more or less optimistic about your company's prospects than you were four months ago?	July-Oct. %	June-Sept. %	May-Aug. %	Apr.-July %	Eng's. (non-elect.) %	Chemicals & Oils Transport %
More optimistic	28	26	24	24	17	33
Neutral	35	35	35	36	71	37
Less optimistic	37	39	41	40	12	30

EXPORT PROSPECTS (Weighted by exports)

4 monthly moving total				October 1975		
Over the next 12 months exports will be:	July-Oct. %	June-Sept. %	May-Aug. %	Apr.-July %	Eng's. (non-elect.) %	Chemicals & Oils Transport %
Higher	68	72	76	84	55	67
Same	12	12	10	8	23	3
Lower	14	13	11	8	22	12
Don't know	6	3	3	—	—	18

NEW ORDERS

4 monthly moving total				October 1975		
The trend of new orders in the last four months is:	July-Oct. %	June-Sept. %	May-Aug. %	Apr.-July %	Eng's. (non-elect.) %	Chemicals & Oils Transport %
Up	26	29	30	25	4	7
Same	16	15	19	21	42	1
Down	54	53	42	37	54	92
No answer	4	3	9	17	—	—

PRODUCTION/SALES TURNOVER

4 monthly moving total				October 1975		
Those expecting production/sales turnover in the next 12 months to:	July-Oct. %	June-Sept. %	May-Aug. %	Apr.-July %	Eng's. (non-elect.) %	Chemicals & Oils Transport %
Rise over 20%	1	1	4	3	—	—
Rise 15-19%	1	7	8	8	13	1
Rise 10-14%	2	2	2	2	4	1
Rise 5-9%	15	12	16	26	29	35
About the same	56	60	56	46	46	7
Fall 5-9%	10	7	7	7	—	26
Fall over 10%	5	2	1	3	—	1
No comment	10	9	6	5	8	29

STOCKS

4 monthly moving total				October 1975		
Raw materials and components over the next 12 months will:	July-Oct. %	June-Sept. %	May-Aug. %	Apr.-July %	Eng's. (non-elect.) %	Chemicals & Oils Transport %
Increase	17	19	17	15	37	4
Stay about the same	56	53	49	54	42	63
Decrease	24	28	31	29	21	33
No comment	3	3	3	2	—	—

4 monthly moving total				October 1975		
Manufactured goods over the next 12 months will:	July-Oct. %	June-Sept. %	May-Aug. %	Apr.-July %	Eng's. (non-elect.) %	Chemicals & Oils Transport %
Increase	17	18	15	9	—	4
Stay about the same	46	35	34	40	71	62
Decrease	28	30	34	36	8	32
No comment	12	17	17	15	21	2

FACTORS CURRENTLY AFFECTING PRODUCTION

4 monthly moving total				October 1975		
	July-Oct. %	June-Sept. %	May-Aug. %	Apr.-July %	Eng's. (non-elect.) %	Chemicals & Oils Transport %
Home orders	43	40	72	80	100	98
Export orders	52	50	46	47	100	92
Executive staff	7	2	5	4	—	—
Skilled factory staff	10	9	12	13	33	1
Manual Labour	4	6	6	6	—	—
Components	9	10	5	10	33	2
Raw materials	1	3	9	9	—	—
Production capacity (plant)	n	1	2	4	—	—
Finance	1	1	3	7	17	—
Others	4	1	1	n	—	62
Labour disputes	20	24	23	21	4	69
No answer/no factor	6	6	9	9	—	—

LABOUR REQUIREMENTS (Weighted by employment)

4 monthly moving total				October 1975		
Those expecting their labour force over the next 12 months to:	July-Oct. %	June-Sept. %	May-Aug. %	Apr.-July %	Eng's. (non-elect.) %	Chemicals & Oils Transport %
Increase	5	4	4	5	—	2
Stay about the same	58	60	50	50	89	53
Decrease	37	36	46	45	11	45

CAPITAL INVESTMENT (Weighted by capital expenditure)

4 monthly moving total				October 1975		
Those expecting capital expenditure over the next 12 months to:	July-Oct. %	June-Sept. %	May-Aug. %	Apr.-July %	Eng's. (non-elect.) %	Chemicals & Oils Transport %
Increase in volume	31	20	—	—	45	86
Increase in value	—	—	28	29	—	—
but not in volume	8	8	—	—	17	15
Stay about the same	25	32	27	27	8	22
Decrease	35	38	43	42	30	14
No comment	1	2	2	2	—	—

COSTS

4 monthly moving total				October 1975		
Wages rise by:	July-Oct. %	June-Sept. %	May-Aug. %	Apr.-July %	Eng's. (non-elect.) %	Chemicals & Oils Transport %
0-4%	—	—	—	—	—	—
5-9%	7	7	5	n	4	—
10-14%	49	39	30	17	84	64
15-19%	27	23	24	23	4	28
20-24%	6	—	—	—	—	1
25-29%	n	20	36	34	—	—
30%+	n	—	—	—	—	—
Same	—	—	—	—	—	—
Decrease	—	—	—	—	—	—
No answer	11	11	5	6	8	7

4 monthly moving total				October 1975		
Unit costs rise by:	July-Oct. %	June-Sept. %	May-Aug. %	Apr.-July %	Eng's. (non-elect.) %	Chemicals & Oils Transport %
0-4%	n	n	n	—	—	—
5-9%	11	11	9	4	—	1
10-14%	27	18	23	13	42	32
15-19%	22	25	22	29	17	9
20-24%	10	14	23	32	33	1
25-29%	9	6	4	4	—	27
30%+	n	2	2	2	—	1
Same	1	1	1	1	—	—
Decrease	n	7	7	7	—	—
No answer	20	16	9	8	8	29

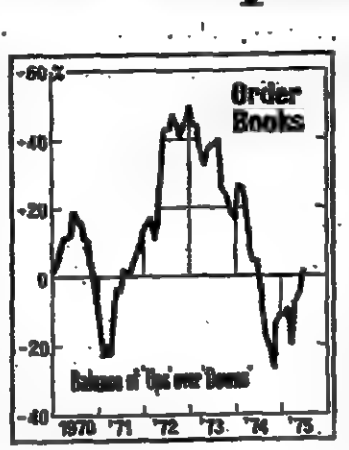
4 monthly moving total				October 1975		
Those expecting profit margins over the next 12 months to:	July-Oct. %	June-Sept. %	May-Aug. %	Apr.-July %	Eng's. (non-elect.) %	Chemicals & Oils Transport %
Improve	24	24	15	16	42	1
Remain the same	34	37	44	51	4	69
Contract	37	38	36	29	50	4
No comment	5	1	5	4	4	26

ORDERS AND OUTPUT

Recession still deepening

THERE is still no sign of any slow down in the declining trend of new orders. Most firms in the three sectors covered last month said that orders were still falling and over half the all-industry sample, which covers the last four months' surveys, report the same trend.

The worst-hit sector in the latest survey is chemicals and oils where the effects of the weather on fuel deliveries have been super-imposed upon the low levels of industrial demand. The decline in the car trade has affected demand for paints and pigments, orders for



hospital supplies are said to be very unpredictable, but demand for agro-chemicals appear to be still buoyant.

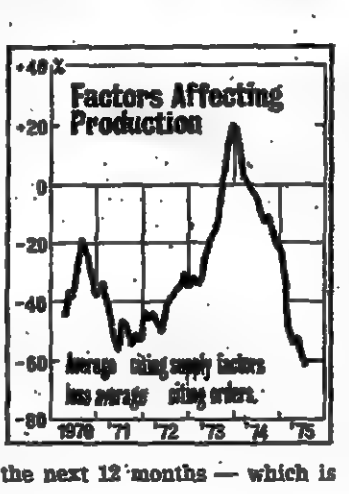
Looking further ahead, the trend of purchases of raw materials and other bought-in supplies is likely on balance to continue to be downward and production forecasts have again been scaled back. In all three sectors respondents emphasised the difficulty of predicting sales and output up to 12 months ahead at the present time: there were too many uncertainties in the current situation both here and abroad.

CAPACITY AND STOCKS

Orders are the constraint

THE DEPTH of the recession is indicated by the way in which shortages of home and export orders have become the single dominating factor determining output schedules. Supply constraints have all but disappeared, except for a few localised complaints about the availability of skilled factory staff. Labour disputes, within the same company or in supplier organisations, are also a continuing cause of difficulty.

On balance industry expects the volume of work in progress to remain about the same over the next 12 months — which is



in line with current expectations about output/turnover over the same period. The same view is taken about materials and finished output stocks, although there is a slight tendency ("downs" over "ups") to foresee a fall. This broadly corresponds with the balance of opinion about purchases of bought-in supplies over the coming four months. Expectations about capacity utilisation rates have been adjusted in line with the current situation, but many firms are still working below these planned levels, particularly in the three sectors covered last month.

CAPACITY WORKING

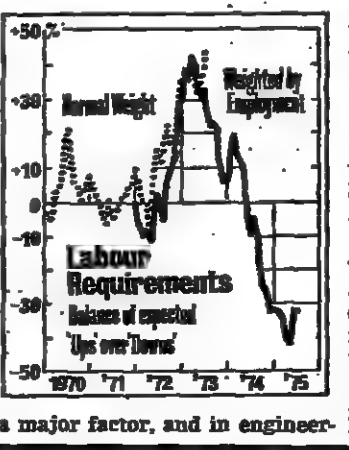
4 monthly moving total				October 1975		
Those working at:	July-Oct. %	June-Sept. %	May-Aug. %	Apr.-July %	Eng's. (non-elect.) %	Chemicals & Oils Transport %
Above target capacity	8	6	16	9	—	15
Planned output	50	45	36	37	58	11
Below target capacity	38	47	48	54	42	83
No answer	4	—	—	—	29	—

INVESTMENT AND LABOUR

Further rise in unemployment

THE BEST that can be said about employment prospects at the present time is that the outlook is not deteriorating as rapidly as it was a few months ago. The balance of replies is still downward but no more so than previously and most firms hope to rely on natural wastage rather than redundancies.

In the case of capital expenditure, on the other hand, expectations appear to have improved slightly, principally because of a more bullish outlook in oils and chemicals, where North Sea investment is a major factor, and in engineering.



Indeed, the "ups" in the all-industry index now outweigh the "downs"—for the first time in just over a year. However, this series is based on forecast output prices rather than volume: in real terms the balance of spending intentions is still downward.

Relatively few firms expect to have to draw upon outside sources of finance to meet their capital needs during the next 12 months, and most think that their current liquidity level is now about right, although a few say that liquidity is still too low.

COSTS AND PROFIT MARGINS

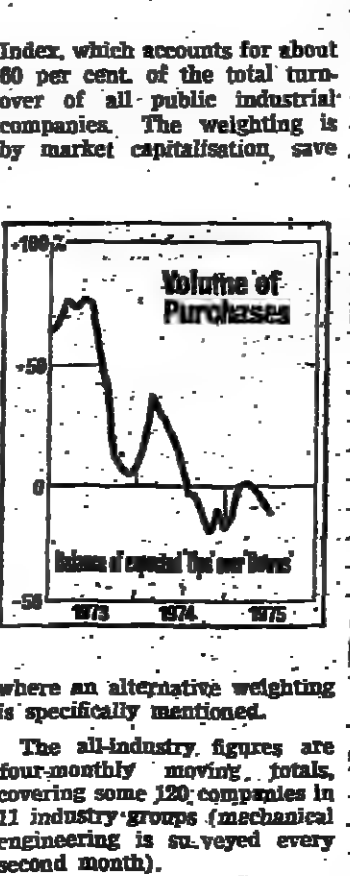
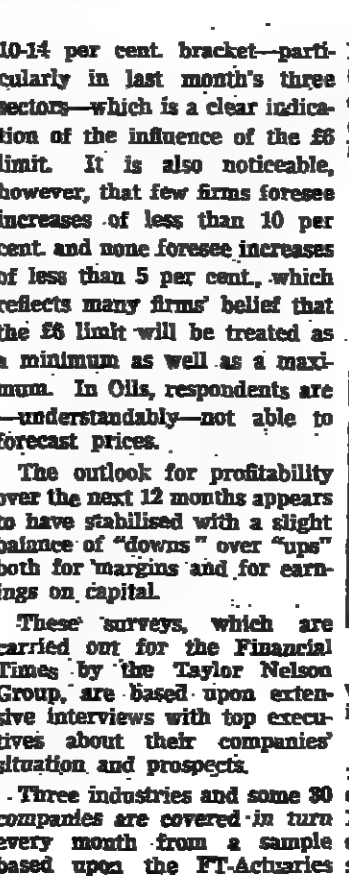
Inflation down to 15%

INFLATION expectations have eased a good deal since the Government brought in the £5 a week pay ceiling. The median forecast increase for wage costs over the next 12 months has come back to 13-14 per cent, while for total unit costs, which is a clear indication of the influence of the £5 limit. It is also noticeable, however, that few firms foresee increases of less than 10 per cent, and none foresee increases of less than 5 per cent, which reflects many firms' belief that the £5 limit will be treated as a minimum as well as a maximum. In Oils, respondents are understandably not able to forecast prices.

The outlook for profitability over the next 12 months appears to have stabilised with a slight balance of "downs" over "ups" both for margins and for earnings on capital.

These surveys, which are carried out for the Financial Times by the Taylor Nelson Group, are based upon extensive interviews with top executives and output prices the median forecast increase is now situation and prospects.

Three industries and some 40 companies are covered in turnable in the bunching of the every month from a sample forecasts for wage costs in the



FINANCIAL TIMES REPORT

Monday November 3 1975

FORTIES FIELD

The first substantial build-up of oil from the U.K. sector of the North Sea starts to-day when the Queen officially opens BP's Forties Field and oil begins to flow into the refinery at Grangemouth.

The high promise of new wealth

THIS HAS BEEN a half-decade of almost unparalleled change both within the industry and within the U.K., starting with the rash of great oil discoveries in the early seventies—of which the Forties Field still remains one of the most important—and continuing through times of political doubt and intervention, rapidly escalating costs, a maturing of the exploration phase to a steadier rate, the grappling with the development problems associated with the deep water and harsh conditions of the North Sea and, now finally, the beginnings of the production build-up itself.

They have been years of almost constant debate as well as activity as British industry has jostled with varying degrees of success for a place in the expanding market for off-shore goods and services; as politicians have attempted to balance out the conflicting invest. in advance of orders

nationalistic, fiscal and social pressures that always come with oil discoveries; as companies of varied background and experience have tried to come to terms with the problems of production and as a society, ill-adjusted to rapid and novel demands on its skills and resources has attempted to cope with one of the largest and most ambitious economic developments to occur within its boundaries since the war.

Criticisms of the performance of industry, oil companies and Government alike, have been profuse. They have often been well-founded. Officials and politicians were slow to see the fiscal and social implications of North Sea oil. But they have proved just as slow and confused in their efforts to rectify past mistakes and build a more secure framework for the future. Oil companies were quick to see the opportunities in the North Sea but, in their haste for rapid development, have all too often failed to appreciate the problems of manpower, planning and preparation that this entailed, preferring frequently to ignore their own responsibility for the strains which divers deaths and innumerable small accidents have illustrated.

British industry has been, on the whole, extraordinarily slow to see the prospects for new markets in off-shore development and has been all too frequently held back by an unwillingness to risk money or, perhaps the interests of the companies themselves did

in Scotland and in England, the development of oil has tended again and again to show up the weaknesses of society—its slowness to respond to change, the lack of mobility of labour, the difficulties in planning permission, the provincialism of local authorities and the lack of confidence and skills among politicians—rather than its strengths.

Effort

But the last five years have above all been the time not of hindsight and commentators but of the "doers"—the exploration managers that kept the effort going even when the weight of geological opinion was against them; the constructors and manufacturers who did make the investment and work with the development from early on; the oil company project managers who saw the vast and complex logistical effort of production programmes; the helicopter pilots, supply boat captains and the men who actually did the work.

With the final coming-on-stream of the Forties Field, much of the development has come to look inevitable, even predictable. This was not how it seemed at the time, at any rate from the outside. Perhaps the oil industry should have recognised early on that the North Sea was a major oil province of worldwide importance and, perhaps the interests of the companies themselves did

tend to make them over-cautious in their public statement.

But at the time that the Forties Field was discovered in 1970 there were still few who believed that this was so, let alone that fields of the size of Forties would be found. It may be that, once Forties was discovered, the oil and supply industries, as well as Government, should have immediately recognised the importance and scale of the enterprise and reacted accordingly. But at the time that the Forties Field was declared commercial in 1971, there was still little to suggest that prices in the world market would rocket as they did three years later or, indeed, that costs of off-shore development would increase almost in tandem.

It is possible in retrospect to argue that the technology used in the Forties Field and many other fields to date has not so much been new technology as the scaling up of traditional systems developed in the Gulf of Mexico over a generation and that oil companies and industry should have foreseen the problems much earlier. But it has been the scaling up of technology, in the nuclear field, in the petrochemical field and elsewhere, that has always provided the real problems of engineering, just as it has been the problems of scale which have always presented the greatest challenge to management.

Bigness has been, from the beginning the hallmark of the

North Sea—the largest marine structures ever built have been built for North Sea platforms; the largest diameter, deepest water pipeline has been laid off the coasts of Britain; some of the largest single project loans for private enterprise have been raised for North Sea fields.

But it is a bigness that has been the result of innumerable small and crucial decisions—the painstaking negotiations for loans, the operation of a pipe-laying barge in which everything has to go just right, the changes in design of the platforms as they are built and the installation of the structures in the unpredictable conditions of the North Sea.

It is for this as much as for what they can now do for the country that the Forties Field and the other major field developments around it in the North Sea at Brent, at Ekofisk, at Montrose and elsewhere should be recognised for the real achievements they are. Certainly they have illustrated many of the problems surrounding North Sea development—the delays which have made the Forties Field a year late into production, the escalation in cost which has doubled its investment from a predicted £350m. in 1972 to a predicted £700m. to-day and the politicking which has come to surround its taxation, participation and control.

But the really dominating feature of the development is

that British Petroleum made the decision so early to go for a full-scale development including pipelines and four mammoth production structures and that to-day, five years after the field's first discovery, the pipeline and associated on-shore facilities should be there and operational, that oil should be flowing and that all four structures should be in place.

Tribute

And it is a tribute not only to BP, which from the beginning did its best to encourage British suppliers, but also to the British companies concerned that all four platforms were built in Britain, that the second two were completed ahead of schedule and that some 80 per cent of the overall contracts have gone to U.K. companies.

Yet it is the nature of all developments, and particularly one as rapidly moving and with such long lead-times as oil exploration and development that the present should appear passed and that the future should appear current. For the country as for the industry, the importance of the Forties Field is that it marks the first fruits of the labours of the last five years.

Forties alone, when it builds up to peak production in 1977, will deliver some 400,000 barrels a day of high-quality oil, or some 30 per cent of U.K. internal demand at the time, and

will bring balance of payments savings of the order of £800m. a year. By next year it will be joined by the first production from the Beryl, Montrose, Brent and Piper Fields. By the end of 1977, with good fortune, the major Brent pipeline to the Shetlands should be in operation tying in production from a number of fields in the area including Thistle and Corran and production should be reaching some 40 per cent of U.K. demand. By the end of 1978, output from the U.K. will jump to well over 1m. barrels a day, or net self-sufficiency, should be reached.

Set against the country's overall borrowing requirement in foreign currency, its historic low economic growth rate and its continued problems with the non-oil deficit on the balance of payments, it may not be possible any longer to treat this programme as the panacea for the country's woes that politicians have occasionally treated it as. But set against the difficulties that the country would face without North Sea oil, the importance of off-shore oil could hardly be over-estimated.

Nor should its benefits to Scottish employment and without that oil. And it is also time to look back and, however trite it may sound, to applaud the efforts of those who made it possible during years when others looked on and doubted.

For all the problems, the fact remains that by 1980 Britain will be the only country in Europe with overall self-sufficiency in energy and the fact remains that the North Sea represents a major new natural resource for a country badly in need of it.

North Sea oil is only now beginning to come to maturity. It will be the next five years which see it bringing practical and apparent benefit to the nation just as it will be the next five years that see companies and the Government decide on the moves which will take it on into the next decade, to continued self-sufficiency, further growth or gradual decline. And it will be the next five years which will witness the really new technology of sub-sea production, buoyant platforms, deep-water transport begin to emerge.

As the Queen turns the tap on Forties Field oil to-day, it is time to look on the future with a degree of optimism that could never have been there before that oil. And it is also time to look back and, however trite it may sound, to applaud the efforts of those who made it possible during years when others looked on and doubted.

Adrian Hamilton

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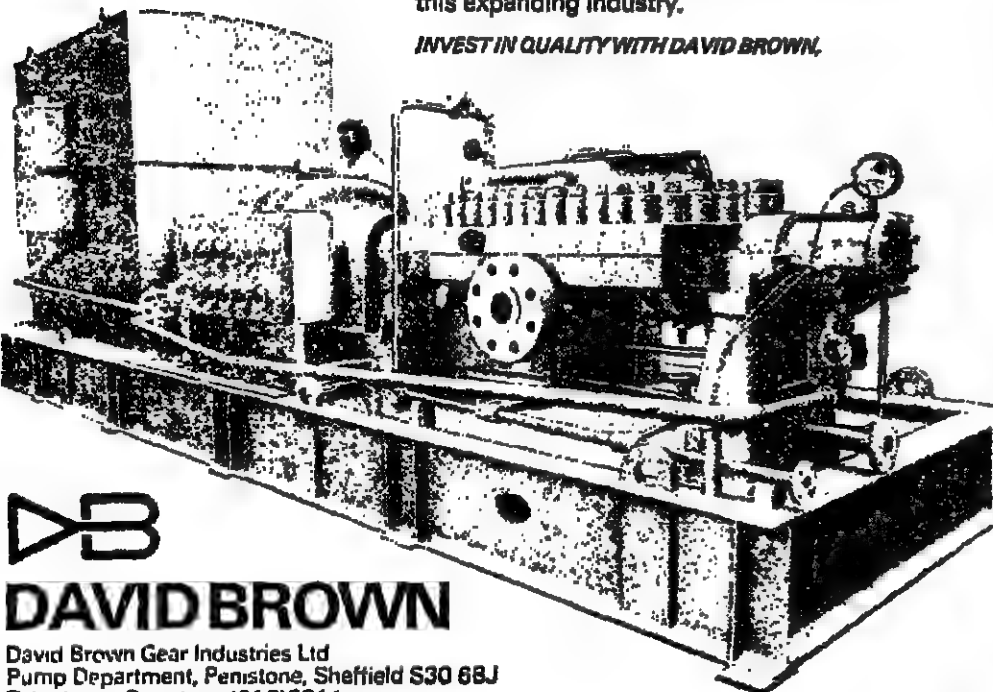
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FORTIES FIELD II

First in many areas

THE DISCOVERY and development of BP's Forties Field off Aberdeen is one of the seminal events of the history of the North Sea. Of that there can be little doubt. The first major oil find off-shore of the U.K. it was also the first find that proved not only that oil did exist in the British sector of the North Sea but that it lay in large enough quantities to justify expensive development in deep water.

The first discovery to be made by a British company, it was drilled by a British-owned and British-built semi-submersible, Sea Quest. BP's first orders for two major production platforms virtually created a British steel platform construction industry at Highland Fabricator's greenfield site at Nigg Bay and Lains/ETPM's yard at Graythorpe near Teesside, while the company's contracts for a whole range of other items including modules, electrical equipment and development well drilling helped to get other British companies to gain their first foothold in not only the North Sea market but also the broader worldwide offshore field.

In political terms, too, it was BP's Forties discovery that helped to arouse Government concern about the tax offset problems of the Middle East. The potential profits that might be made out of the North Sea and the need for tougher action to prevent offshore profits being set against other aspects of the international oil companies' business, just as its overall financing package for the field helped to create a whole new banking interest in this area.

Yet this future and the changes that the Forties would bring was not always obvious from the start. Despite BP's reputation for uncanny success as an exploration company, there were several senior geologists and executives in it who doubted the potential of the

North Sea from the start and who were firmly convinced that oil, on the basis of experience in onshore geology in the U.K. and in Europe, would never be found in sufficient quantities to make much impact offshore in the U.K.

Like other companies, BP's first enthusiasm was for the gas prospects in the southern sector of the North Sea following on from the major onshore discovery of the Groningen gas field by Shell and Esso in Holland and the establishment of a number of small gas fields on the eastern coast of England. Although the company did take out licences further north during the second round of allocations in 1965, including the Forties Field block 21/10, and although it was specially favoured by the British discretionary licensing system with its emphasis on giving the best blocks to companies with experience and an established position, it was still with great doubts that it started drilling in the North Sea.

Incentive

The doubts about the North Sea were only intensified when the industry began to move to the north in the waters off the Scottish and Norwegian coasts in the late 60s. By that time the peak of gas exploration had been passed, leaving a somewhat sour taste among the companies involved which felt that the price being paid for the gas left them little incentive to search further.

Little in the drilling either in the southern sector of the North Sea or in the early wells in northern waters suggested that the conditions were right for any major oil accumulations. The price of oil on the world markets was falling and the finances of the major oil companies were under heavy pressure as the independents with access to cheaper Libyan

oil moved into the market. BP, like other companies, began to reassess its investments in the North Sea and it was at this time that, according to some of the people involved, there was some feeling in the company that it should ease its burdens by farming out, or taking part, in such blocks at 21/10.

In the event it did not happen, partly because of the continued faith among the geologists most directly concerned and partly because signs of oil at last began to appear in wells drilled by others. The Ekofisk discovery of 1969 by the Phillips group off Norway was the major signal, of course. But it was found in a Danish chalk horizon of more relevance to the Danish and Norwegian sectors than to the U.K. Soon after, however, the Amoco group found oil in Tertiary sands on block 22/18 in the U.K. sector—ironically with BP's Sea Quest rig—and the signs brightened. A year later British Petroleum drilled its first and highly successful well on block 21/10 to the north-west, completed and tested in December 1970.

The discovery completely changed the scene. Although further wells were obviously required to assess the extent of the reserves, the structure was known to be a large one covering some 35 square miles. The well had tested oil at extremely promising flow rates of around 4,700 barrels per day and had encountered a thick oil zone of several hundred feet which, if it extended throughout the structure, suggested a major field by world standards. Clearly BP was on to a huge find that would justify development and the heavy expenditure required to put production platforms in deeper water and rougher weather than had ever been attempted by the oil industry.

Even then, however—and with the successful completion of a series of delineation wells

in the following year—the company faced options. The high productivity of the wells, the thickness of producing sands and the relative simplicity of the structure suggested that production could be carried out from a number of giant platforms drilling a pattern of deviated wells.

But a central question was still posed by the distribution problem. On the one hand, the company could produce by tankers—a method already established in South-East Asia and the Gulf of Mexico. This would give BP an earlier cash flow and enable it to build up production more gradually. But in the weather conditions of the North Sea and the depths involved, it would entail storage facilities. It would have a limited production capacity and it would suffer long periods during the winter when loading was impossible.

The alternative would be to lay a pipeline to the coast. This was likely to delay the time of start-up, involve greater "front end" loading burdens on the company's finance and would involve BP in laying the longest, deep-water, large-diameter pipeline ever attempted by the industry. But considering the size of the field and its potential production, it would bring greater long-term benefits in a more rapid build-up to full production, as well as being safer.

It was the latter solution which the company eventually chose and which it has proceeded with ever since. Delineation drilling in 1971 confirmed the field as a "giant" with more than 4bn. barrels of oil in place and a recoverable reserve of between 1.5 and 2bn. (the field is now officially categorised as having 1.8bn.).

By the end of that year the company was able to announce a £300m. programme involving the installation of four major platforms on the field (of steel design, partly because of the

soft seabed conditions), a submarine pipeline to Cruden Bay near Peterhead with a further on-shore line to take the oil down to the company's refinery at Grangemouth and a full range of on-shore facilities.

On the whole, these early decisions have been justified by experience since. Like other companies, BP almost certainly underestimated the actual problems of scale and weather involved in the North Sea. The construction of the first two platforms required the creation of two entirely new businesses in Scotland and England and the strains of this, of labour problems and of the effort to refine the design during construction meant that both were a year late.

Like other companies, BP underestimated too the difficulties of laying pipe and installing platform equipment off-shore in the North Sea. Laying of the subsea line, intended to take a single season, in fact slipped well over into the next year. Filling and installation of the modules on the first two platforms was delayed by several months and it was only the expenditure of large sums in keeping a fleet of barges and vessels throughout the winter of 1974-75 which enabled the company to keep its production schedule even within a year's delay.

Concession

Partly as a result, cost estimates soared, more than doubling to around £750m. within the space of a few years and it was only a dramatic improvement in the company's overall finances during last year which saved it from having to negotiate further loans over and above the £370m. loan package so carefully and painstakingly negotiated in 1972. Original hopes within the company that profits could be set off against overall corporate losses—real and unreal—were finally squashed by the Public Accounts Committee Report of 1973 and it was only the quinquennial of world oil prices coupled with substantial concession in the Government's Petroleum Revenue Tax proposals which prevented the project from turning sour.

Yet these problems were overcome. The pipeline was laid and largely buried by the end of 1970. The first two platforms were put into position by the end of 1974 and drilling from the first one commenced in June of this year just as the second two platforms were completed, ahead of schedule. By September of this year the first oil was being produced and was starting to fill the lines and the company was able to go ahead with plans for the official inauguration of the field.

Work on the field has still some way to go, although it is bound to be something of an anti-climax from now on. Drilling from the second platform, Highland I, is due to commence over this winter and with luck the modules on the second pair of platforms should be sufficiently advanced to start drilling from them in early spring and autumn of next year. If this goes well, full production should have been reached by mid-1977 to provide the country with some 20 per cent. of its fuel needs, to provide BP with its first real profit on the field a year later and to provide the nation as a whole with a desperately needed new resource and a new hope for the future.

Chris Baur
Scottish Correspondent

Adrian Hamilton

The Scottish impact

AS THE first major U.K. oil field in the North Sea, BP's Forties project, on which development work began almost four years ago, was not only a vast offshore baptism for the company: it was also the enterprise on which Scottish industry cut its teeth. It is therefore interesting to look back at some of the assessments BP were making in the early days. These were, after all, the estimates on which manufacturers, service operators, finance houses and public authorities were largely weaned—though many of them look distinctly unreal now for reasons which have only become plain with the benefit of hindsight.

The crucial estimates in determining the impact of the development on the local economy were those relating to expenditure and employment. The company's evaluation in December 1971 was of a first stage Forties development costing about £100m., plus some £15m. for development drilling. This would achieve roughly 50 per cent. of the production flow from the field by late 1975. Total costs for the full development, to peak production of about 20m. tons a year, it was thought then, would probably reach towards £250m. Two months later this global figure was revised to around £300m. and later still to £360m. in what then became the largest fund-raising syndication ever.

Platforms

Again, it was at first forecast that direct employment by BP and its contractors would probably reach a peak of about 6,500 during 1973 and that the completed first phase would require a small permanent staff of perhaps 300. In the event, with gruelling intervening inflation, the entire Forties development is now estimated to cost some £75m., including development drilling, of which about £59m. in capital expenditure has been committed so far. The direct employment generated by the company and its contractors throughout the U.K. is estimated at upwards of 10,000 rising to 15-20,000 if the "spin off" into ancillary activities is taken into account. The permanent staff crewing the four production platforms will be about 1,200-1,500 with several hundred more manning supply boats, communications systems, treatment plant and tanker berths. The bulk of this employment has been and will be located in Scotland.

The point of recalling these discrepancies is not to promote some gratuitous criticism, but to illustrate the genuine uncertainty of the territory into which BP and its caravan were then moving, and the fast-changing climate into which they were pressing. If, for instance, the scale of finance required for this single development was even four years ago unprecedented in international markets, then you can be sure

that the effect which news of it had on the Scottish industrial community was, initially at least, positively hypnotic.

Despite the substantial tradition of involvement (and indeed, one-time leadership) which Scotland, particularly West Scotland, had in the gutsy marine and heavy engineering industries, the business horizons of much of the region's industry have often been set a good deal lower than those which were beckoning from the North Sea. The largest single industrial projects which had by then touched the experience of many companies had probably come in £30m.-£50m. dollops, for items such as power stations, steelworks or smelters. There was, at the outset at least, a genuine difficulty of perception.

Indeed, in the early stages during which the Forties Field was opening up the unfolding North Sea market, it seemed that many of those industrial disbelievers what was about were inclined to imagine that the thing was just too big for them to handle. And often this will have been a realistic conclusion. Some, who investigated more deeply, were discouraged (sometimes had to be discouraged) by a reluctantly honest appraisal of their own limitations, whether these concerned production capacity, technical skill, financial stability or management competence.

But others soldiered on. The director of the Forties project, BP's Mr. Mark Lanning, now recalls the psychological change that took place. "In the early days of 1972 people were wandering into my office asking me what they should do," he says. "Now they are coming in to tell me what they are going to do. The whole atmosphere has altered since the first days when a lot of folk were simply floundering around."

That the climate has changed is itself a substantial tribute to BP's tenacity. From the outset an extraordinary amount of management effort of its 150-man Forties task force was devoted to exhaustive explanatory work with environmentalists and landowners—wayleaves had to be negotiated through some 300 separate parcels of land for the 140-mile pipeline from Cruden Bay on the Aberdeenshire coast, to Grangemouth on the Firth of Forth—and to extensive missionary work with industry and commerce.

If anything, the company now probably feels that the net it cast to encourage local industrial participation was too wide. It certainly created huge administrative problems. BP's first trawl for likely builders of deck modules for its production platforms, for instance, produced a list of some 43 companies, all of which had to be assessed. Similarly, approaches were made to 50-75 companies to identify suitable fabricators of

such items as platform structure nodes, leg sections and pile guides.

The actual fall-out in Scotland from all this organisation and "educational" work has been considerable. It is not possible, of course, to calculate the precise proportion of the 500-odd Scottish-based companies now engaged in oil-related manufacturing and service work, which actually owe their presence in the offshore markets to the spark provided by Forties. But the list would include some seminal projects.

Welding school

The giant among them is the Nigg dry dock created in Easter Ross by Highland Fabricators (a partnership of Brown and Root and George Wimpey), at a cost of some £25m. That yard, which has delivered two of the four Forties platform jackets, is now again building up its labour force from about 1,600 to 2,800 as it tackled its third contract, for the Ninian oilfield. The initial phases of its development were substantially funded by BP and the oil company also met the bill for the training of some 1,800 men at the Highland Fabricators welding school. The Nigg yard was the first of two located in the Moray Firth area and has been instrumental in transforming the economic pro-

spects of the Eastern Highlands which, until then, had virtually no pool of skilled engineering labour.

On the Firth of Clyde, the Forties project was the moving force behind the establishment of the Foster Wheeler-John Brown deck module fabrication yard at Dunbarton. This has since developed as the largest of Scotland's specialist module yards, although it was planned originally simply to handle the BP contract.

Other diverse Scottish concerns were quickly drawn into the business through that initial oilfield project. These included manufacturers of such items as pumps, switchgear, turbines, communications equipment, generators and instrumentation. On the service side, local companies won business, like supply fleet operators (working out of Aberdeen and Dundee), between which BP had divided its administrative and offshore operations) and marine and consulting engineers became engaged in designing and constructing the Fort tank terminal and gas treatment plants at the company's Grangemouth refinery, which both mark the end point in Scotland of the oil's 250-mile journey from Forties.

Chris Baur
Scottish Correspondent

Adrian Hamilton

Exploration and Production Services (North Sea) Limited

140 Piccadilly, London W1V 9FH. Tel: 01-499 8387

Woodlands Road,
Kirkhill Industrial Estate, Dyce, Aberdeen
Tel: (0224-72) 3601

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FORTIES FIELD III

Surmounting the equipment problem

I OPENED the small packet joints, with four main legs pile containing the Perspex BP driven dozens of feet into the paperweights with its encapsulation sea bed.

Installation of the towers was 1975 with a certain nostalgia, a precise manoeuvre calling for This thin treacherous black liquid a combination of engineering has cost enormous sums of skills, seamanship and good money and a not inconsiderable weather, and it speaks volumes loss of life and limb. By far the greatest cost in developing the Forties field was incurred in the construction and installation of the four steel production platforms and the subsea pipeline that runs 110 miles from the field to Cruden Bay—about \$515m. out of an estimated expenditure of \$745m. for the complete project.

When the commercial potential of the Forties Field was realised by BP in 1970 the company was faced with a decision about the kind of production system that would be viable. Traditionally, offshore fields had been developed using steel towers that supported all the facilities for drilling, the separation of oil, gas and water, flaring, communications and accommodation. Concrete towers had been designed, but never built or used for oil production in such a depth as the northern North Sea, and subsea completion systems were seen as an imaginative solution for the far-distant future.

Injection

It is now a matter of record that BP opted to use four steel towers in the Forties Field. The towers now stand in about 400 feet of water and must be able to survive storm conditions that hegar description. The production schedule calls for a number of wells to be drilled, deviating from each tower to give the best possible drainage from the field: 27 wells from each of the first two platforms to be installed (Graythorpe I and Highland I), and 26 from the second two (Graythorpe II and Highland II). Six or seven of the wells from each platform will be used for water injection, the rest for oil production.

The total weight of the decks and equipment supported by the towers is about 15,000 tonnes. This loading, together with the massive forces exerted on the structures by waves, winds and tides, required exacting design and fabrication criteria. The towers are a complex lattice of welded steel tubes and "nodes".

from Cruden Bay to the refinery at Grangemouth.

BP's latest estimate for the completed subsea pipeline is \$115m. for its 110-mile length. That is \$594 a yard, a staggering sum of which the cost of the steel pipe itself is only a small fraction. It includes the considerable cost of coating to give the pipeline "negative buoyancy" and protection against damage from dragging anchors and fishing trawls, together with the huge daily costs paid to the contractors who operate the fleets of supply boats and tugs, the lay barge and the retrenching barge.

The lay barge is a complex vessel that inches itself along the predetermined pipeline route while welders couple sections of the pipe together, the welded pipeline dropping to the sea bed over a supporting pontoon or "stinger" as the barge moves forward.

Once this operation has been successfully completed, the trenching or "bury" barge moves along the pipeline as it lies on the seabed, scooping a trench in which the pipeline lies for added protection. Depending on the state of the seabed, several passes may be necessary to give the pipeline a covering of more than a few feet.

It requires little imagination to understand what a complex procedure this is, but even BP underestimated the shattering effect of that bogman of subsea pipe layers: the wet buckle. This is a rupture in the welded section of pipe, usually resulting from a kink during laying and sometimes from the failure of a piece of equipment such as a valve.

Wet buckle

Ron Watkins, BP's manager of pipelines and terminals, explains how the cost for such an incident can escalate to frightening levels: "When we calculated the possible cost of a wet buckle we thought we could fix one in about three weeks. But shortly after we started the operation, a valve that hadn't been tested properly failed. The line ruptured and flooded with water, sand and other material being swept several miles into the pipe.

"This incident took about three months to repair and cost us about £2m. Another time, one of our contractors dragged anchors in a storm and did millions of pounds of damage to the pipe trying to recover anchors worth just a few thousand pounds."

The Forties pipeline is one of the deepest large-diameter subsea projects yet undertaken by the oil industry. The 36-inch diameter pipe can deal with a production rate up to 300,000 b/d from the Forties and was installed only after about £1m. had been spent on development work with the contractor (Saipem) in the Mediterranean.

Ron Watkins succinctly summed up the lessons learnt in this project by saying that anything to do with North Sea offshore work has to be planned onshore meticulously, down to the last nut and bolt. "The cost of even a simple mistake at 400 feet is too great," he said with feeling.

With the above figures in mind we can only agree with him. But even these enormous extra operating costs would pale into insignificance if it transpired that BP had opted for the wrong kind of production system in the first place. Company engineers pooh-pooh the possibility of a catastrophic collapse of the Forties towers, but the structural record of smaller towers in, say, the West Sole gas field is not encouraging, particularly in view of the paucity of accurate data on weather, wave heights and hydrodynamic forces.

Whatever the virtues and failings of giant steel towers, the four Forties platforms and the associated pipeline have provided British industry with a large and attractive market for goods and services of all kinds. Harry Bourne singled out the Acrow company, Adamson and Hesthett—manufacturers of boiler and turbine equipment, pressure vessels, heat exchangers and other similar equipment—as having pulled out all the stops to re-gear to the North Sea oil industry. The company has obtained orders totalling over £23m. for oil platform legs and tubular sections and claims to have delivered every completed order on time.

John Wilson

Onshore facilities

THE OFFSHORE programme to find and produce oil from the Forties Field has inevitably attracted the spotlight—rightly so in view of the working conditions and the technology involved—but the establishment of land facilities has also been an ambitious and costly business, attracting some £50m. to £60m. of investment.

Indeed, what happens to the oil once it is landed at Cruden Bay serves to indicate the importance of North Sea oil and gas to British industry as well as the country's balance of payments. For the first time British interests are able to pump crude from their own fields to refineries and on to power stations, petrochemical plants and the petrol pumps.

The first land link in the chain is the 36-inch diameter pipeline which stretches 137 miles across Scotland from Cruden Bay to the BP refinery at Grangemouth. The route runs to the west of Aberdeen, south to Strathmore, on to Perth, where the line crosses the River Tay to the east of the city, over the Ochil hills, across the Forth and then west to Grangemouth.

BP says that the route was carefully chosen to avoid, as far as possible, mining areas

(because of the threat of subsidence) and areas of particular ecological importance. Permission for the 137m. pipeline was obtained from some 300 owners or occupiers of land. Although there were five statutory objections to the proposals, these were withdrawn after further negotiations.

Conventional pipelining techniques were used although the Tay and Forth crossings posed a few special problems. Here the work was carried out at times of the year which ensured that salmon and other river life were not adversely affected.

Recent activities of the Tartan Army, which has sabotaged control equipment on this pipeline, has served to illustrate not only the dangers of disrupted operations but also the possibility of leaks occurring. Apart from alarm systems, based on line pressures and volumes, isolating valves have been installed every ten miles and at each river crossing as precautionary measures. In addition contingency plans have been set up to ensure the immediate shut-down and bleeding of the line.

The landline ends at the Kerse of Kinnell, near the Grangemouth refinery where a

new £10m. gas separation plant has been built. Gas taken from the separators will feed a gas treatment plant which will recover propane and butane liquids as well as "pentane plus" condensate and dry gas steam.

From a flow rate of 400,000 barrels a day of oil, the company expects to extract about 230,000 tons a year of dry gas, 430,000 tons per annum of propane, 280,000 tons a year of butane and some 100,000 tons a year of condensate.

Gas deals

It was learned in August that BP has agreed to sell both the residual gas associated with the Forties field and its share of the Frigg Field's gas to the British Gas Corporation. Details of the deals have not been disclosed; indeed, most of the associated gas in the Forties Field will be used by BP at the field itself and at its Grangemouth refinery. Nevertheless, it is thought that at peak production the company will have some 10m. to 15m. cubic feet a day of surplus gas and it is this that BP has agreed to sell to the Gas Corporation over a limited number of years at an undisclosed price.

Booster pumps will split the crude into two streams at Grangemouth, one feeding the refinery at an average of 100,000 barrels a day in phase one of the operation, and the balance to a new £15m. marine terminal and storage facility in the vicinity of the Forth road and rail bridges.

As the maximum production rate of the Field will be well in excess of 400,000 barrels a day, it is possible that 300,000 barrels a day and more may pass through this new terminal.

From the Kerse of Kinnell the crude will travel through a 30-inch pipeline to the onshore storage terminal at Dalmeny, three miles inland from the Forth. From there it will be pumped, via a 48-inch submarine line, to a sea island berth off Round Point, about a mile east of the Forth rail bridge.

Here, in a water depth of some 80 feet, tankers of between 50,000 and 300,000 dwt. will be loaded at a rate

of up to 15,000 tons an hour. In a Middle East-type operation the crude will then be shipped out to export markets or to other U.K. refineries.

A proportion of the crude piped into the 10m. tons a year Grangemouth refinery will eventually end up as naphtha, a raw material for the chemical industry. The refinery is already linked to BP Chemicals' adjoining production complex and now, with assured supplies of feedstock, the whole integrated operation becomes an even more attractive proposition.

Established in 1951, the petrochemicals complex has emerged as one of the largest in Europe, covering some 205 acres of the 380 acres available. Drawing feedstock from the refinery, the complex produces a wide range of materials used in the chemicals, plastics, synthetic rubbers and fibres industries.

The total capacity of the site is over 1m. tonnes a year, although the current depression in the chemical industry means that the actual production levels are well below this at present. Nevertheless it is clear that BP Chemicals sees Grangemouth as the centre of major expansion in the future.

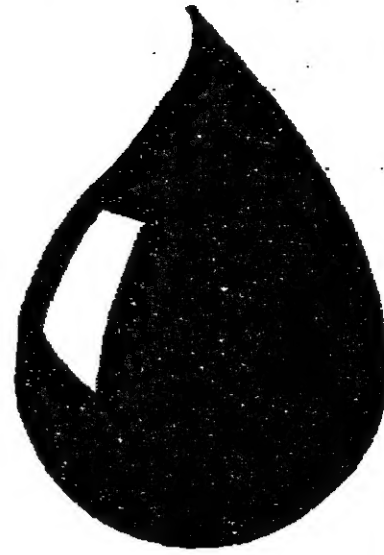
BP Chemicals is currently spending £68m. on developing the Scottish site including £18m. on a new plant to produce 54,000 tonnes a year of high density polyethylene—a project announced a matter of weeks ago.

The company would have liked to have developed at a faster rate but it has been held up by cash flow constraints and the depressed market for chemicals.

In spite of the present recessionary problems, the chemicals arm of BP has made little secret of the future plans for Grangemouth oil-chemicals operation. The company was at pains to tell a gathering of European journalists recently that the large amount of land still available for development and the good port facilities to handle exports gave Grangemouth "the greatest petrochemicals potential in Europe." The potential has been further enhanced thanks to the arrival of North Sea oil for fuel and feedstock.

Ray Dafter

First



The first mainline pumps for North Sea oil were built by Weir Pumps Ltd.

The first oil piped ashore from any British field is speeded on its way by Weir pumps—255 miles from the BP Forties production platforms to the Grangemouth refinery. Many more Weir pumps are used in other installations at sea and ashore.

The first sea-bed production platform,

Graythorpe One, was lowered into position with the help of Weir-Pacific valves. Hundreds of the company's valves are installed in production platforms all over the North Sea.

Steel castings from the Weir Foundries Division, Polypac oilfield rubber consumables, Zwicky filters and a wide range of other

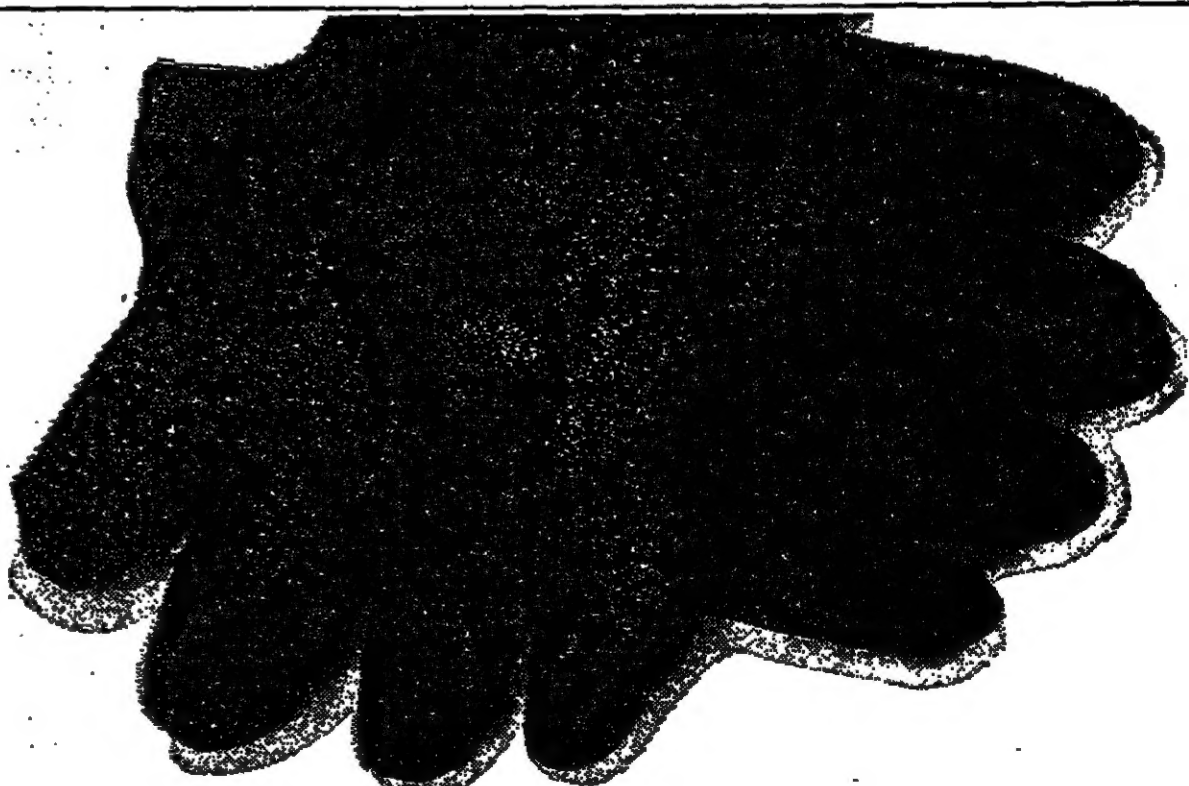
Weir Group products are the first choice of many demanding oilmen and their suppliers.

Weir—first in many fields of advanced technology, with powerful engineering services in Aberdeen and at three major Scottish plants, are leaders in the exciting new adventure of North Sea oil.

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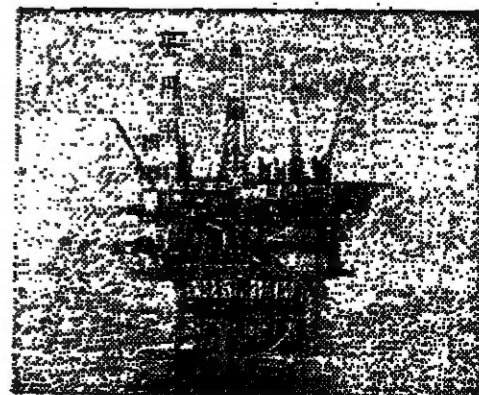
Oil from the Forties: KCA Drilling have a big hand in it, too.

KCA Drilling are drilling contractors to BP in the Forties Field. Now that the flow of oil from BP's Forties Field has become reality, we will continue to have a big hand in it. As drilling contractors, KCA Drilling have worked with BP in the construction of the drilling equipment on Graythorpe I and are now drilling some 27 wells from this platform.

KCA Drilling is a British oil-drilling company which provides management and equipment for oil field operators worldwide: Nigeria, Turkey, UK, Libya and Algeria for land-based rigs; Forties and Beryl Fields in the North Sea for off-shore rigs.

KCA Drilling is proud to be

associated with BP in opening up Britain's first major North Sea oilfield.



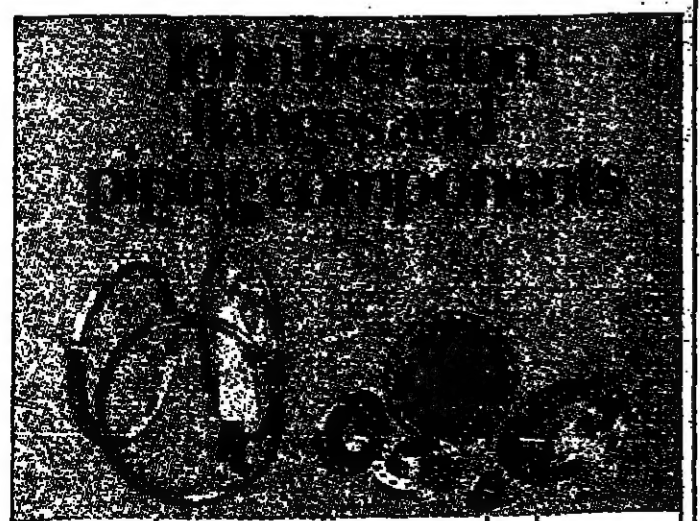
Production Platform Graythorpe I in BP's Forties Field in the North Sea, where KCA are drilling some 27 wells.

KCA

DRILLING LIMITED

Berkley Square House, Berkley Square, London W.1. Telephone: 01-491 2698 Telex: 28285

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John Brereton are proud to be

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